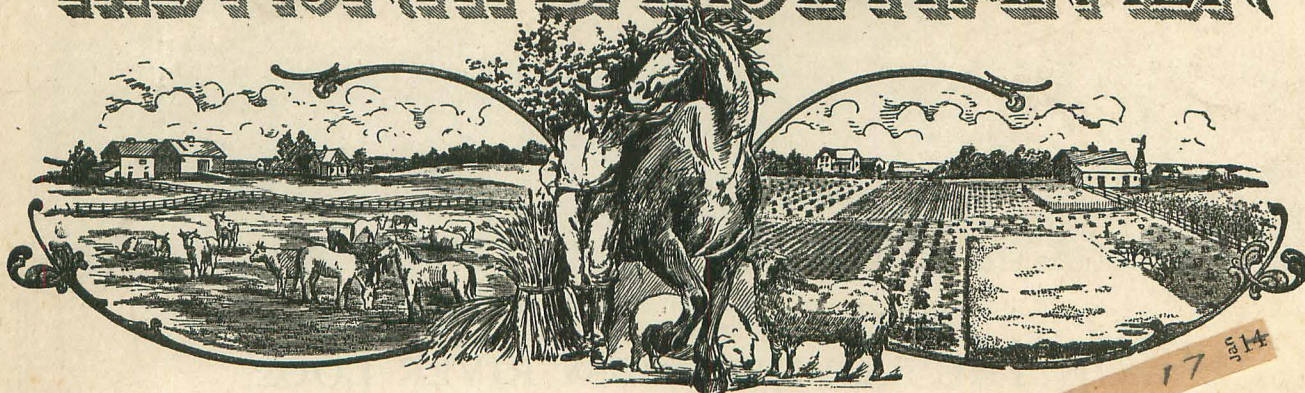


THE NORTH DAKOTA FARMER



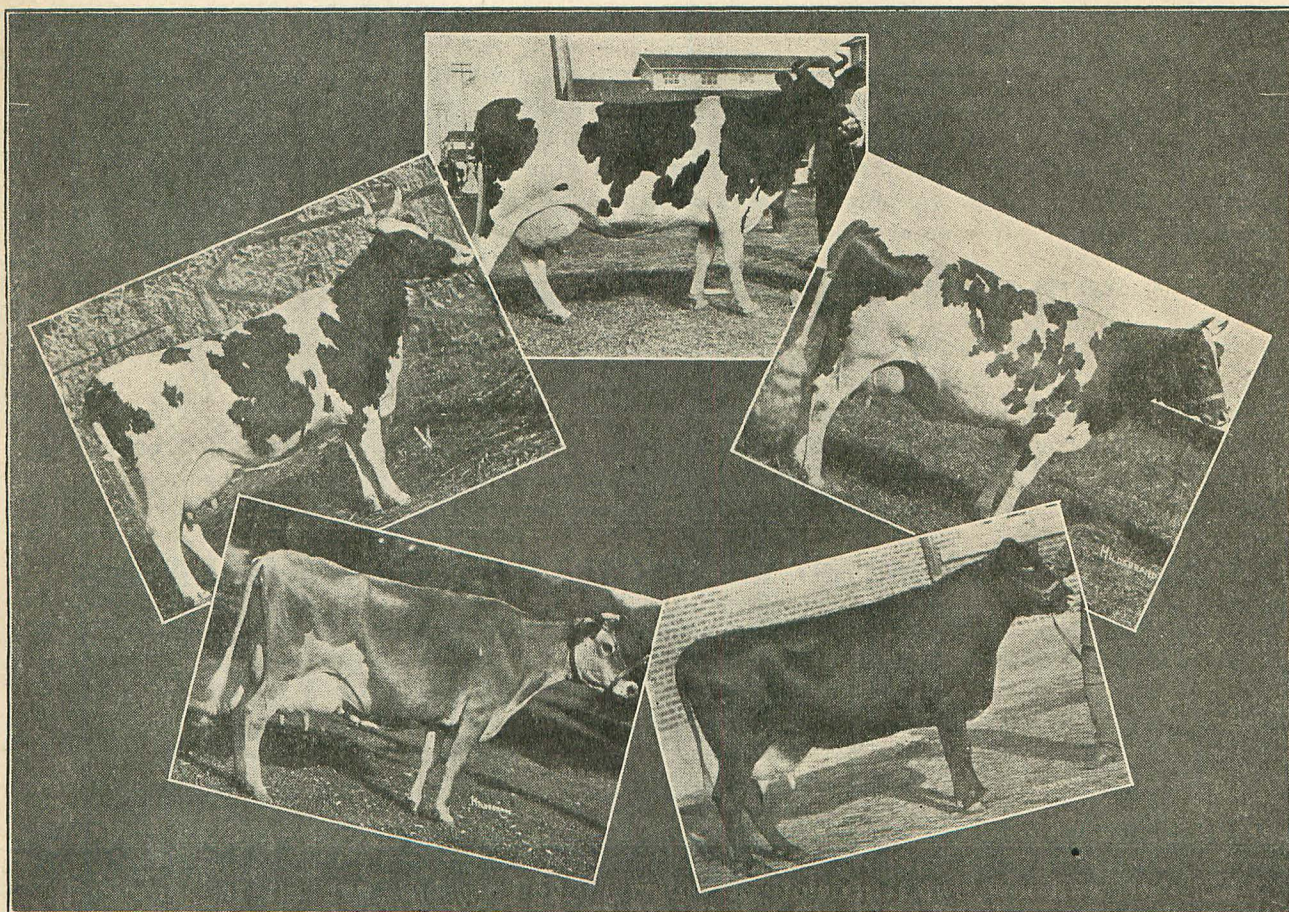
"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Alex Alin

17 Jan 14

Vol. 15 No. 8

Lisbon, North Dakota, February 15, 1914 50 Cents A Year



Beginning at the top and circling to right: 1. Holstein Cow, Woodrow De Kal. 2. Guernsey Cow, France Masker's Daughter. 3. Red Polled Cow, Lisa. 4. Jersey Cow, Gamboges Fiddlewinks. 5. Ayrshire Cow, Stockerton Primrose 3rd.

978.4
N814
Graham



Beef can be produced at a minimum in the Alfalfa Valley.

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The Alfalfa Valley is located in McHenry County, North Dakota, South of Towner, the county seat and near Karlsruhe, Rangely, etc., on the Fargo-Surrey Line of the Great Northern, also tributary to new towns on the Devils Lake-Drake extension of the Soo Ry.

Level, well located, good land for diversified farming and stock raising, with excellent markets, churches, schools, etc., also telephones and rural mail service to portions of the Valley.

A NEW COUNTRY AWAITING NEW FARMERS WITH A GREAT DEVELOPMENT IN PROSPECT.

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In the old range days thousands of dollars have been made in cattle in the Alfalfa Valley. Greater opportunities exist at the present time for livestock raising on a smaller scale. With the thick growth of native hay thruout the valley—with the thousands of acres of excellent pasture and the unlimited supply of pure water at from 8 to 20 feet, stock-raising, dairying, etc., is one of the most profitable industries that can be engaged in. Beef is the source of the greatest revenue. It is an ever necessary product and the demand is far exceeding the supply.

SUB-IRRIGATION - - ALFALFA - CORN

The entire Alfalfa Valley is underlaid with an unlimited supply of pure water, obtained from 8 to 20 feet. The land is sub-irrigated, which makes it especially adapted to alfalfa. Corn does exceptionally well also other grains essential in connection with the livestock industry. Crops on sub-irrigated land are practically immune from drought, no matter how dry the season. Nature furnishes a rainfall of about 23 inches annually in the Alfalfa Valley, as well as a permanent supply of water below the roots in case the rain does not occur at the proper time.

\$25 and \$30 ^{PER} ACRE and 20 YEARS TO PAY FOR THE LAND

Regular terms, one-fourth down and the balance to suit purchaser. An excellent investment, which, with the settlement and development of the Alfalfa Valley, will increase rapidly in value.

To farmers who purchase and move on to the land this year—\$2 per acre down and the balance in nineteen equal annual payments interest 6 per cent.

Cut out coupon and mail today for full particulars

ALFALFA VALLEY LAND CO.
Towner, N. D.

Dear Sir:

Please send me literature and full details concerning your lands.

Name.....

P. O.

State.....

**The ALFALFA VALLEY
LAND COMPANY**

TOWNER, - NORTH DAKOTA

THE NORTH DAKOTA FARMER

Vol. 15, No. 8

LISBON N. D., FEBRUARY 15, 1914

50 Cents a Year

TOO MUCH MARGIN

By J. H. Worst, Pres. N. D. A. C.

At present it costs in the neighborhood of sixty per cent of the value of farm products for distribution as against forty per cent for their production. Is this a "square deal?" Who is to blame? What is the remedy? If farmers possess the energy, capital, and skill to annually produce something like \$10,000,000,000 worth of agricultural products, have they not also the skill, credit, and energy to effect and direct such organizations as will distribute their products without paying such tremendous toll to middlemen? If they have not the capital, they have the means for creating all the necessary credit, and if they have not the skill it is time they acquired it. In other words it is high time for every farmer community to organize for its protection; then for these several organizations to federate. In this way the business machinery can be perfected so that the producers and consumers can be brought close together so that only necessary expenses of distribution need be incurred.

As a matter of course, so-called middlemen are necessary for the transaction of business. They are indispensable. However, it is neither reasonable nor necessary to support a larger number of middlemen than business demands.

The law of supply and demand should govern middlemen in the same sense it governs threshing rigs, school teachers, or engineers. Every unnecessary middleman cuts into the profits of producers and adds to the expense of consumers. While a surplus of school teachers on the other hand might result in a lowering of wages; yet middlemen, where given absolute control of distribution, have the power to reduce the price of farm products and at the same time raise their cost to consumers sufficiently to, at least, make for themselves a comfortable living. In short, the margin between what the producer gets and the consumer pays is needlessly large.

Producers and consumers must somehow be brought closer together. Left wholly to middlemen they are not likely to get closer together. More likely the spread that separates them will continually grow wider and wider. And why? Because in many respects it is more agreeable to be a middleman than a producer; there is less risk to run and less disagreeable work to be performed. Hence the army of distribution continues to grow far beyond the limits of demand.

Producers can remedy this by using some of the middleman's ammunition—brains, just good grey matter applied to the business end of production. If the middleman's occupation is so agreeable, those who produce the world's food also should share in these delights by grafting distribution on to the production end of their business. It can be done. The co-operative creameries of Minnesota and other states are an evidence that great savings can be made thru co-operative effort. The California Fruit Growers' Association is another example. Instead of raising fruit and permitting so-called commission men to fix the price of their goods, the producers employ their own agents of distribution. By this means there is little danger of glutting the market and the fruit nets the producer exactly what it is worth, less cost of labor, transportation, and the agents' salaries. Moreover, it enables the consumer not only to obtain honest goods but to get them at a fair price. The Association will not accept fruit without first inspecting it, and in most cases the Association does the picking and packing as well as the distributing, for the fruit grower.

All this is simply the result of co-operation; of working together for their mutual benefit and for the benefit of their customers.

There is plenty of opportunity for the farmers of North Dakota to co-operate along many lines, with profit.

I have heard it asserted by men who ought to know, that farmers of North Dakota should receive for their wheat, at least ten cents per bushel above what they actually do get. This may not be wholly true. I am convinced, however, that if dockage and the freight on the dockage were taken into account, that more than ten cents per bushel is lost. Moreover, if the depression in the price of wheat, caused by over optimistic reports of the yield that are heralded abroad, also were taken into the account, ten cents per bushel would measure but a fraction of what might be realized, but is not realized.

Suppose, however, that farmers do lose ten cents per bushel in the price of their wheat, from all unnecessary causes, including depression of market price by the bears. What does that mean? Figures sometimes elucidate. We seed annually about 8,500,000 acres of wheat. This acreage at an average of fifteen bushels per acre would total 127,500,000 bushels. Deducting 10,500,000 bushels for seed, and calculating a loss of ten cents per bushel on the remainder of the season's output, we reach the enormous total of \$11,700,000.

Now, suppose these figures are approximately correct, and by co-operation the farmers of the state were to each give ten cents per bushel,—the amount they will lose anyhow, if the ten cent per bushel loss is correct—and the \$11,700,000 were to be used for the purpose of erecting mills to clean the grain and thus save both the dockage and the freight on the dockage; and also to grind the wheat near where the grain is grown and thus keep the bran and shorts in the state to be fed here. And as for the flour—well, a few good agents, acting for all, would find a market for it wherever flour is needed, either in our own country or abroad, at the world's market price for flour. In this way the world's market price of flour, less cost of grinding, transportation, depreciation of machinery, repairs, etc., and a small commission for selling the product, would fix the price of the farmer's wheat. There would be no speculation nor unnecessary waste of by-products—just the necessary expense of raising the grain, manufac-

turing it ready for consumption, utilizing the by-products, and selling the flour to whosoever has the cash to pay for it, whether in car or shipload lots. The farmers and their employees would simply grow the raw material on their farms, manufacture it in their mills, and sell the finished product thru their own established agencies.

Is this an impossible picture or is it not?

The money? Yes, there's the rub. But come to think of it, if farmers are beat out of ten cents per bushel annually, anyhow, wouldn't it pay to put up ten cents per bushel for a year and stop the leak forever thereafter? It will do to think over, at least.

The Need of Community Co-operation in Crop Production and Marketing

By H. L. Bolley, Prof. of Botany, N. D. A. C.

Gentlemen of the Tri-State Grain Growers' Convention:

There is a great deal of discussion just now with regard to whether the farm lands of the chief cereal or grain-producing regions of the United States are being exhausted by over-cropping and ineffective fertilizing or whether the rather inferior crops, as indicated by the average yield per acre, are due to some other causes, particularly inefficient methods of handling the soil and seed.

Your Chairman, President Worst, has asked me to speak upon seed improvement and soil purification. Many of you are by this time convinced that the topic as given in the program is sort of a hobby of mine. You are right, but it's a good one to ride on for a time in this wheat belt. People, I think, have an erroneous idea as to what I have been trying to teach with regard to soil purification and seed handling. Some have even gone so far as to indicate that I do not believe in the use of fertilizers; that I do not believe it makes any difference what sort of soil is used in order to get a crop. I will not try to make all of these points clear today. I have spoken to you a number of times before in regard to crop diseases and soil infection and as to their influence on the soil and seed. I have also often re-iterated the improbability of being able to procure good crops of wheat under constant cropping conditions because of the presence of diseases in the soil and in the seed. I am quite convinced that I can make good on the assertion that the lands here in the Red River Valley are not particularly worn out for wheat, but rather have only become infested with wheat disease-producing organisms, and that when a proper crop rotation and soil and seed purification is introduced the farmers will find that they will be able to raise just as good wheat as before.

This, of course, does not indicate that one should not use all the available fertility that can be obtained. It does, however, indicate that it will be possible to carry out a system of crop rotation; for, if our lands are not destroyed as to texture and chemical content—"exhausted," but only disease infected, we can win and win easily. If we can get rid of the false idea that a good crop rotation does not use up fertility and substitute, therefore, the idea that a good crop rotation is one which is properly arranged to produce a healthy growth of each crop in the series, then farmers will be able to understand why a crop should be placed as it is in the series. If we can get our farmers to understand that by bad types of seed and improper methods of handling farm manures they can undo all this careful work of crop rotation and soil tillage, then they will be ready to improve the yield and quality of grain produced. They will have a faith to proceed which is founded on understanding, for it will then be easy to understand why a properly arranged crop rotation is effective. If, as I claim, our constantly cropped wheat lands are not particularly exhausted from a chemical standpoint, but only disease infested, then we have a real reason for using only the best pure bred plump seed properly disinfected and a reason why every one should go into the crop rotation business with a cheerful heart, for its chief aim is not to save fertility, as we have often heard, but to get big crops. When the crop rotation system is the right one, no crop in the series will be close enough related as to kind to allow it to carry or support any of the diseases of any other crop in the series. This will give the root diseases of a particular sort of crop time to die out of the soil before that crop is again placed on the land.

The subject of seed and soil sanitation as a whole is too broad a one to be discussed in one-half hour and it is not my aim to undertake it today for within a month you will be able to read bulletin 107 of the North Dakota Experiment Station in which I have tried to illustrate such matters, theories, and reasons rather fully.

No doubt the answer to the question: "What is the matter with the crop yields and quality of seed products produced?" will not be found in any single explanation of condition but rather must be attributed to many different causes. The writer at this time wishes to call attention to the importance of our farmers and business men taking some specifically progressive or constructive steps looking towards the improvement of our cropping conditions thru procuring a more stable or uniform type of seed and crop. To do this there must be co-operation of the growers and of the handlers of the products.

Just at the present time a good many people are complaining, the writer thinks properly, that the consumer of farm products is not properly in touch with the producer of farm products. The producer of farm products also complains that he is not properly in touch with the consumer. This would seem to indicate that our markets are controlled or regulated by middle-men, selfishly perhaps, in their own interests. Possibly there may be some truth to this, but I feel that even this problem rests for its solution largely in the possibility of farmers in certain large commercial crop-growing regions so handling their crop that each particular region may become a center of production for a certain particular kind of crop so that it will be possible to establish a market about it. This last statement implies that the present conditions are not such as to appeal to the proper establishment of a standard market. I believe that there is real truth in this and do not wish to scold the farmers or middle-men or consumers for the conditions which have gradually grown up thruout the the United States, whereby everyone, consumer, middle-man and producer, each is hunting for something new. The consumer complains that the product is not of good quality, whether speaking of wheat, apples or other products. He also complains that the price is very high. When he looks it up, he complains that such products are shipped long distances on railroads instead of short distances. He complains that the farmers in his vicinity never raise the products they ought to raise to feed him but let people half way across the continent raise these and thus allow the rail-

roads to add a lot of freight. The middle-men complains that if it were not for his ability to pick up scattered crops of different kinds and sort them into uniform lots that the farmer would hardly have sale for his stuff, and the farmer complains that when there is a good lot of potatoes or grain, etc., in his neighborhood, no one seems to want to buy, or pay a price worth the cost of the crop.

This is only a rough statement of a few woes which come about because each farmer in most parts of the United States is largely trying to raise something different from that raised by his neighbor. I receive many letters which are worded essentially as follows: I am thinking of getting a new kind of wheat called Marquis. what do you think about it? I have been raising the Scotch Fife but it don't seem to do well. Another one in the same neighborhood writes: I am thinking of getting some of this Durum wheat known as Kubanka. What do you think of it? My Blue Stem does not seem to do well. Another one writes from the same neighborhood saying: I understand the Experiment Station has a very fine quality of Velvet Chaff Wheat No. 188. Now, my Durum wheat shriveled pretty badly last year and was all black-pointed and yellow-bellied. Will it pay me to sow some Velvet Chaff? Now, to illustrate this point further, it may be said that the reputation of the Red River Valley and the Northwest was made on Blue Stem and Scotch Fife wheats, and it may be said that at present there are so many kinds of wheat in this region that an expert cannot name them or sort them out from the mixture that is commonly going into the general market. Some farmers are raising a better Scotch Fife wheat than they have raised before on the same old land while the majority of them are raising a grade of wheat which commands a poor market.

To illustrate the point in another way, within the past ten or fifteen years the Red River Valley counties of Minnesota and North Dakota have made a good reputation for potatoes of high quality. That reputation was almost wholly made upon the first potatoes which were grown in the region, namely, Early Ohios. In the last few years, the farmers of this region and the seed houses all over the United States have apparently seemed to vie with each other to ascertain how many different kinds of potatoes might possibly grow in the Red River Valley. Until when someone from St. Louis or Ohio wants a car-load of Early Ohio Potatoes it is almost impossible to get it from the general

market of any ordinary shipping point. There will be white potatoes, pink potatoes, russet potatoes, long potatoes, short and round potatoes, of all kinds, shapes and sizes offered in the same market, when, in actual fact, the consumer wants to buy some one kind of potato that will be about of uniform size and bake nicely with the same amount of fire in the same length of time. The middle-men, who want to supply the demand for potatoes would like to know where to go to get the particular kind he needs in car-load lots. There are certain few shipping centers, such as Moorhead, Minnesota, and the Greeley district of Colorado and certain shipping points in Maine where the shipper can be pretty certain he will find a reliable uniform sort of potatoes, if he makes an effort.

These illustrations, the writer thinks, are sufficient to call attention to a great evil in agriculture, namely, the jumbling and mixing of all sorts in the naming of varieties with the consequent inability of the handlers of market sorts to procure a particular uniform product they want without too expensive effort. The wholesale seed merchants know of the innate desire of the farmers to change seed and tho they probably know that it is a false idea and destructive to the hopes of obtaining permanent agricultural improvement, yet they cater to it. When they find a rather good sample of potatoes, or a good sample of wheat, or other farm seeds, they have been in the habit of giving it another name, knowing that they are more likely to be able to sell for seed the supposed new variety. Many people have spent much energy trying to make or develop new varieties with the vain hope that the new will be more productive than the old under agricultural methods which do not recognize purity as to sort or kind. The farmers, on their part, spend a lot of time trying to get yields out of new or unknown varieties and comparatively little effort on improving standard market varieties.

Of course there are certain large farming regions in which certain varieties are more beneficial than others. My recommendation is that the farmers of a given community should unite upon a standard variety of seed, no matter what the crop, and each should select that commercial variety which is characteristic of the region in which he is farming. They should co-operate to keep out, essentially, all other varieties from that particular region, and make every effort possible to improve the business on which the reputation of their particular shipping station depends. In doing this, they will

do three things: First, there will at once be a marked improvement in the quality of the seed which is used for planting purposes in each particular crop. Next, the out-put from a particular station or shipping point will be more nearly uniform. Shippers, in whatever section, will know where to order products of the particular type demanded by their market. The reputation of the local shipping center will gradually become established for that particular product. On these two essential features a stable agriculture can be constructed. Along the present basis, tho a man may raise a very fine crop of some new variety or some unknown or improperly named variety, he does not have a market for it because he cannot afford to build a market himself. He can not furnish sufficient supply and he cannot use the reputation of his neighbors for a uniform product because they don't have any. There are neighborhoods in which one can find thousands of bushels of good wheat, etc., if there were some method of sorting and shipping without too great cost. This is only saying that in a particular shipping point the farmers should unite with each other in growing the kind of wheat or other crop the market demands and which that particular region has always shown capability of producing. The market will then come to them and the price can be better for all concerned.

Evils due to Mixed Varieties: Aside from the evil marketing conditions to which I call attention, mixed varieties of a particular kind of crop scattered thruout all the cropping regions of the country bring about other conditions which are destructive to agricultural progress. Mixed varieties make it difficult to raise uniform products. There is never a uniform time of ripening. One is ripe when the other is green. The cost of harvesting and storing is greatly enhanced. When one variety of wheat is ripe enough to harvest the admixture is too green. This can also be said of the maturing of barley, oats, or any other grain crops. The man who grows crop mixtures cannot reap a uniform product. The quality is bound to deteriorate from year to year. He cannot improve it by grading or selecting with any ordinary machinery. The time will surely come when he must change seed in order to get something better. Change begets change and instability begets instability in grain production as well as in breeding for the production of a dairy herd, and the process tends to introduce all the kinds of diseases to which a particular crop is heir.

Crops of wheat which mature rather early, also mature their diseases more early than the ones which have a later maturing period. The spores of the diseases of the early crops are distributed in great quantity to the later maturing crops with the result that the latter are almost certain of destruction or deterioration. In order to fight weeds, diseases and crop pests, the farmers of a particular farming community must co-operate with each other in raising uniform types or varieties of the particular kinds of crops which are characteristic of their community. In this way they can bring about crops with uniform periods of development and ripening so that there may be a uniform or co-operative effort of controlling the crop pests. Under a proper cropping system farmers of a neighborhood should be working in the same manner, and at the same time for the destruction of diseases and weeds. Under the present system one farmer fights one day and the other fights next week or some other time and there is no co-operation in point of time. One man has his work undone by the winds and water because his neighbor and he did not fight at the same time. Example: When your neighbor begins to spray the potato bug, it's time for you to get busy. This applies equally well in the case of plant diseases and weeds.

Proper methods of tilling the soil, proper methods of seed disinfection and proper methods of rotation have a great influence in controlling crop diseases. Crop diseases account for much more of the deterioration which is commonly spoken of than does the matter of lost fertility. No matter how fertile the soil may be, if the diseases which are characteristic of a crop have opportunity to have full

sway, that is to say, if the farmers are not united in their methods of fighting or controlling the diseases, it will be impossible for that particular region to improve its crop output. This is essentially true in cereals where the fields are often closely contiguous and the dust and dirt of one field is continuously blown to another. Weed seeds and disease spores, like other plant and animal pests are largely distributed by wind and water and by the general farming operations. I suggest that the farmers of a community study the question of proper cropping and decide upon the particular varieties upon which to co-operate, then work together to improve seed and cropping methods with respect to each particular crop. This will bring about a community interest in cropping which is likely to result in crop improvement and a condition of progressive agriculture in each particular community. Such methods of co-operative working with the standard commercial crops will also make it possible for the government or state, or, indeed, the farmers themselves to develop a marketing system which is much less expensive than that which we are now familiar with, and it is possible that even the middle-men may yet have plenty to do and yet be useful to humanity.

I would especially emphasize the thought that there is not likely to be agricultural improvement in any community until the farmers co-operate in raising special crops. Under present conditions, it is impossible to prevent the mixing of sorts, especially of cereals. It is thus practically impossible to improve any variety of such crops. One man improves it while the others deteriorate it. Under the co-operative plan of effort, whereby the farmers of a particular region attempt to ship a particular variety any improvement which is made in the proper handling of the seed will be likely to be reflected in the output from the entire region; for when the individual farmers find that a particular quality of that variety is demanded by the market and that he can not share in the co-operative returns unless he meets that standard, the standard will be met just as it has been met by the cream producers in the best butter centers.

This will create a demand for standardized seeds of known quality and variety. By co-operation of the growers and the seedsmen, such improved seeds will be obtainable. Our state has a seed law shaped to aid in this work of standardization and seed improvement, but no wording of law or sweat-begrimmed labor will help any



**HAVE
YOU
TRIED**

**NEW MARQUIS WHEAT and
NEW WHITE DANISH OATS?**

MARQUIS is the new Canadian Fife Wheat that won the Grand Championship Prize for several years. Many farmers harvested 45 bushels per acre last year. Is early maturing, exceptionally plump and of the finest milling qualities. Much superior to any other spring wheat.

NEW WHITE DANISH OATS, we introduced from Denmark — It yielded 65 bushels per acre, is stiff in straw and uniform in maturing. Grain is very large, plump, extra heavy and thin hulled. Write for free Samples and New Catalog.

FARMER SEED & NURSERY CO.,

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FARGO FOUNDRY CO., Fargo, N. D.

The Largest Foundry Machine Shop and Boiler Shop in the Northwest. A large stock of Structural Steel and Iron a ways on hand. Full Line of Blacksmith Tools for Farm use. The Biggest plant in the Biggest Little City in the world.

We make a specialty of modern Fire Escapes. Best Tools and Skilled Workmen is the secret of our success. While in our city call and see us and judge for Yourselves.

Oxy-Acetylene Welding in connection.

End of North Bridge, N. P. Ave.

community,—in which each man strives to get something different to sell than that produced by his neighbors.

AUTOMOBILE NOTES

Frank X. Mudd, a prominent member of both the Chicago Automobile Club and the Chicago Motor Club, is the new chairman of the Touring Information Board of the American Automobile Association. Howard Longstreth of Philadelphia, who has served for the past three years, asked to be relieved of the chairmanship on account of increased business duties, and President John A. Wilson in

casting about for a successor hit upon Mr. Mudd, a pioneer motorist and an inveterate tourist who has traveled over the road in all sections of the United States.

The appointment of Mr. Mudd will meet with hearty approval in the west and his location in Chicago will be particularly advantageous in view of the increasing amount of touring which is taking place in the Middle West.

Recently, as chairman of the Runs and Tours Committee of the Chicago Automobile Club, Mr. Mudd started work on a tour to the Pacific coast in 1915, in which year that section of

country will be visited by thousands of A. A. A. members.

TRI-STATE GRAIN GROWERS' CONVENTION

BREAKS RECORD

The Tri-State Grain and Stock Growers' Convention held its 15th annual meeting at Fargo, North Dakota, January 20th to 23rd inc. The new auditorium made it possible for all to attend the meetings.

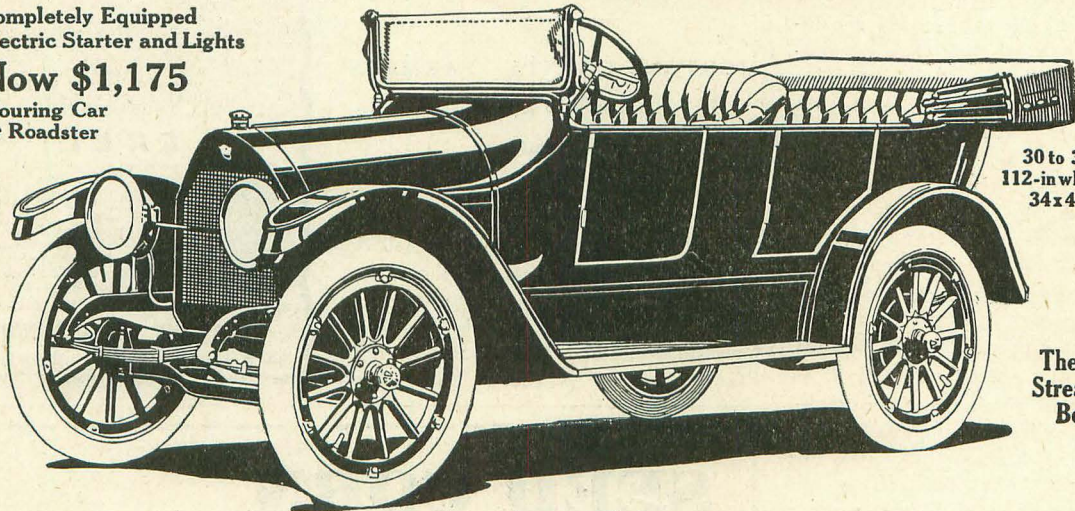
"Co-operation and Marketing" was given a good deal of attention. President Worst, in his annual address, made a strong appeal for im-

Reo the Fifth 1914 Summer Series \$220 Less

Completely Equipped
Electric Starter and Lights

Now \$1,175

Touring Car
or Roadster



30 to 35 h. p.
112-in wheel base
34x4-in. tires

The New
Streamline
Body

Mr. R. E. Olds has now done what he aimed at when he brought out this final car. By confining his output for years to one model, he has brought down the cost over 16 per cent.

Up to this season, Reo the Fifth sold for \$1,395 completely equipped, with electric starter and electric lights. Now, with this new streamline body, with better equipment, with 36 improvements, the price is \$1,175 equipped.

How He Did It

Three years ago Mr. R. E. Olds brought out Reo the Fifth as his 24th model. He then announced —after 25 years of car building— that this car marked his limit.

This new chassis, like every new chassis, required an immense investment. New automatic machinery, new jigs and tools. And against each car a charge was made to cover this expense.

This Car jumped at once to an enormous sale, and that machinery investment has been all wiped out. Now this charge is deducted

from the price. Also the lower tire cost. Also the lower cost of electric equipment. As a result, we now announce this \$220 reduction.

The New Things

This year we adopt the beautiful streamline body. All the leading cars, both in Europe and here, are now coming to this type.

All instruments and gauges are set flush with the dash. We use a ventilating, rain-vision windshield. The car comes equipped with electric starter, electric lights and electric horn. The searchlights have dimming attachment.

There are in all 36 new features, most of them in beauty and equipment.

An Honest Car

Reo the Fifth has stood among all men as the highest type of an honest car. All the steel is made to formula. All is analyzed twice. Every driving part, as a margin of safety, is given 50 per cent over-capacity.

The gears are tested in a crushing machine for 75,000 pounds per tooth. The springs are tested for 100,000 vibrations. The car has 15 roller bearings, costing five times as much as common ball bearings. It has 190 drop forgings to avoid the risk of flaws.

It is built slowly and carefully, with countless tests and inspections. Each car is built as though Mr. Olds were building it for himself. So the car stays new. The upkeep is very small. Year after year, when other cars grow troublesome and noisy, Reo the Fifth keeps new.

It is built for men who want the utmost in a car. Men who want low cost of upkeep. Men who buy the car to keep. It could be built for about \$200 less without all these precautions.

And it has our exclusive one-rod control. No levers in the way.

A thousand dealers sell Reo the Fifth. Write for name of nearest dealer. Also our new catalog.

Reo Motor Car Company, Lansing, Mich.

Canadian Factory, St. Catharines, Ont. Canadian Price, \$1,575.

(222)

provement in marketing farm produce. He brought out the fact that the farmer gets less than half of what the consumer pays. He gave co-operation and organization among farmers as the remedy. Dr. Vincent, President of the University of Minnesota, gave an address on "Team Play," bringing out very forcibly the need of co-operation. Oliver Wilson, Master of the National Grange, emphasized the need of organization among farmers. In this way legislation can be influenced so as to be more favorable to the farmers. He cited the rural free delivery of mail and the direct election of senators as two measures that the grange had worked for and won. He also contended social life provided by the grange was an important factor in farm life. The Equity Society had numbers on the program dealing with co-operation and marketing.

On Livestock Day, Thomas Cooper, Director North Dakota Experiment Station, gave a strong argument for livestock on the farm by citing the increased returns from livestock as compared with grain alone. He said that as far as the investigations went that the best returns would be secured in North Dakota when thirty to forty per cent of the income came from livestock and the rest from grain. Mr. A. J. McGuire of Grand Rapids, Minn., stated that in their ten years' work on grading up by use of pure bred Guernsey bulls the first cross has resulted in an increase of fifty pounds of butter fat per year.

One day was given to "Conservation." The addresses included such subjects as the Clays and Coals of North Dakota, The Briquetting of Lignite, Prevention of Tuberculosis, Good Roads, Making Paper and Fabrics from Flax Straw. Governor Hanna brought out the need of more people to develop the state's great resources.

One-half day was devoted to horticulture and forestry. A good deal of emphasis was laid on growing wind-breaks and on the growing of such fruits as apples, plums, strawberries, raspberries, currants and gooseberries.

The report of the committee on Rural Credits recommended a system of credit banks, in which shares are sold and the money loaned on land security at a low rate of interest for a long period, and the payments made on the amortization plan.

The committee on Farm Management especially emphasized the need of keeping labor, machines and horses at work to their full capacity.

The four days' sessions were crowded full, the morning sessions beginning at 8:30, so it is out of the question

to even mention the names of all on the program.

Dr. J. H. Worst, was re-elected President; T. A. Hoverstad, formerly Secretary, was elected Vice-President, and W. C. Palmer, Secretary.

A half-day's sessions were held at the Agricultural College for the women.

The North Dakota Corn Show was held at the same time. The improvement in North Dakota corn is very marked. This has been brought about by careful work in corn breeding by a number of the farmers. L. S. Thorpe of Mayville, who had the grand-champion ten ears, has been raising this corn six years—and he started with well-bred corn. Many could hardly believe that some of this corn had been raised in the state.

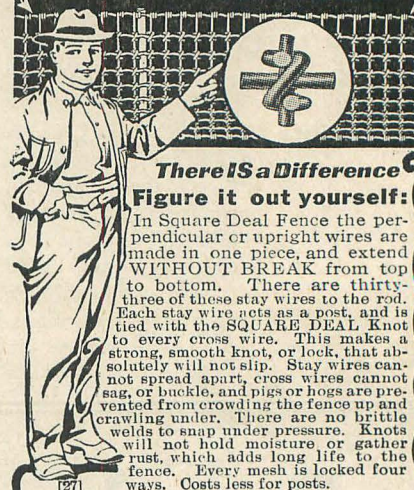
A Pure Seed Show was also held. In this the awards were made on the basis of purity, germination and scoring. Six hundred and thirty-three entries were made.

MORTON COUNTY FARMERS' INSTITUTES

W. C. Palmer

A series of farmers' institutes covering two weeks are being held in Morton county. These meetings will be held at Elgin, Carson, Flasher, Fort Rice, Glen Ullin and Mandan. The corps of lecturers consists of John Christianson of New Salem, Max Pfander of the Mandan Experiment

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There Is a Difference Figure it out yourself:
In Square Deal Fence the perpendicular or upright wires are made in one piece, and extend WITHOUT BREAK from top to bottom. There are thirty-three of these stay wires to the rod. Each stay wire acts as a post, and is tied with the SQUARE DEAL Knot to every cross wire. This makes a strong, smooth knot, or lock, that absolutely will not slip. Stay wires cannot spread apart, cross wires cannot sag, or buckle, and pigs or hogs are prevented from crowding the fence up and crawling under. There are no brittle welds to snap under pressure. Knots will not hold moisture or gather rust, which adds long life to the fence. Every mesh is locked four ways. Costs less for posts.

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Seattle, Wash.

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Ten cents just about covers wrapping and postage. It costs us 30 cents to get out this book, not including the money it cost in salaries to the expert men who have given nearly a year to the work. We lose money sending you the book. But we know we'll gain a lot of friends and get many orders for lumber and millwork.

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If you see a plan you like, you can tell whether the cost is in keeping with your ideas. Isn't that fine? All prices are based on Seattle costs. These are probably even higher than yours, excepting the item of lumber. On lumber, we can sell you very much cheaper than your local dealers. Read about this saving at the left. Then fill out the coupon, send with it 10 cents in postage or slip a dime into the envelope (wrapped in a couple thicknesses of paper) and mail today.

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(Be sure to write plainly)

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Seattle Silos are made of famous Puget Sound fir from our forests and manufactured into staves in our mill; for these one-piece silo staves we use only the choicest timber. Close and straight grained. Free from sap and large knots; wonderfully durable.

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These doors are quick detachable; no lifting; easily swing in or out; door bars form strong ladder from which, by our original arrangement, hoops are easily tightened.

Send coupon for folder. On a single silo we can probably arrange to give you practically carload shipment price. To one farmer in each township we have a very special offer. Write today. Use the coupon opposite the hand.

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440 Union Ave., Seattle, Wash.

Station, A. E. Greenwood of the State Dairy Department, E. A. Wilson, in charge of demonstration farms for the N. P., and W. C. Palmer, Agricultural editor of the North Dakota Experiment Station.

The first of these meetings were held at Elgin on Monday and Tuesday. The farmers were the most interested in stock and how to grow feed for the stock.

Mr. E. A. Wilson who has charge of the demonstration farms for the Northern Pacific R. R., discussed the growing of corn and alfalfa. The N. P. has a demonstration farm at Elgin so the results secured at this station were cited to show what can be done. He emphasized the value of corn, both in furnishing food for stock and also in putting the land in shape for producing a good and a sure crop

of grain. In the alfalfa experiments it has been found that deep plowing is necessary for success as all planted on shallow plowing had failed. He also advised sowing it in rows and cultivating it.

Milk-testing and record-keeping was taken up by Mr. Greenwood. He had a Babcock milk-tester along and tested milk before the meeting calling attention to the different steps and giving hints and precautions that save time and trouble.

Mr. Christianson who has been farming at New Salem for more than twenty years, related how he tried grain-farming for eight years and never raised a crop. The next step was to go into livestock and the cows have made good returns. It has enabled him to increase the size of the farm; to put up a fine set of buildings, with all the modern conveniences. The cows also paid off the mortgage that grain-growing put on the homestead. After they went into cows, the next problem was how to get a market for the butter and this was solved thru the co-operative creamery. The one established at New Salem has been running now for nearly twenty years and has never been shut down. The cows and the creamery have turned the crops into money.

Tree-growing was the subject assigned Mr. Pfander. He advised planting the tree seeds of such trees as ash, elm, and box-elder. These can often be secured along the water courses where these trees grow. He also advocated the willow for the outside windbreak. The native willow can be used. Cuttings can be made, which is an easy and quick way to plant them.

The band furnished music. At the end of the first evening's session a free motion-picture show was given.

A banquet was also given for the institute corps and other visitors in town. It was a very fine one. The best that could be secured from the market was served the guests.

\$100 AN ACRE ALFALFA YIELD

By W. O. Brant, Beach, N. D.

A crop that yields a gross return of over \$100 per acre on semi-arid land should attract the attention of farmers anywhere. Especially when it costs no more to grow such a crop than to grow a crop of corn. This is not a story of money made in the fruit belt of Oregon or some fertile irrigated valley, but simply the amount of the success of a farmer near Beach, North Dakota, with a rainfall of but nineteen inches per

year. The crop with which he made this money was alfalfa grown for seed production. The man who grew the crop was J. B. Bosseman.

Mr. Bosseman secured his alfalfa seed a year ago last spring from the Experiment Station at Dickinson, North Dakota. He secured two pounds of seed, enough for one acre, and sowed it in rows three feet apart. These he cultivated several times that summer, and clipped a couple of times to keep down the weeds in the rows. Aside from this nothing was done to the field last year. This spring he took plants from those rows and transplanted them to hills, putting one plant to a hill, and the hills three feet apart each way. He set out three-fourths of an acre in this way, cultivated it both ways during the summer, and this fall secured from that three-fourths of an acre, 170 pounds of alfalfa seed, all of which he sold for fifty cents a pound. This gave him a return of \$85.00 from three-fourths of an acre. Pretty good for a dry land farm.

The beauty of growing alfalfa for seed lies in the fact that a stand once secured will last for years. Next year all Mr. Bosseman will have to do will be to cultivate this field several times, cut a crop of hay, then cultivate again and take off another crop of alfalfa seed.

The seed he threshes out with an ordinary threshing machine with all the concaves in and everything set up tight. This knocks all the seed out of the hulls and then it has to be fanned several times to clean the dirt out of it.

From the original acre, Mr. Bosseman also secured seed this year, but this was not so good, running only about 100 pounds to the acre. This is not so bad, however, as he obtained a return of \$50 for simply the work of cultivating and harvesting.

The reason he gets such a good price for his seed is that he has the pure Grimm seed which is probably the only variety which will stand the

extreme cold and drought of the North Dakota climate. The seed of this variety is very scarce and high-priced.

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in your town to sell our prairie grown trees and fruits. Salaries paid weekly. People want our trees because they can stand the drying winds, short seasons and cold winters. Write at once for particulars.



400,000 Settlers a Year

Immigration figures show that the population of Canada increased during 1913, by the addition of 400,000 new settlers from the United States and Europe. Most of these have gone on farms in Manitoba, Saskatchewan and Alberta.

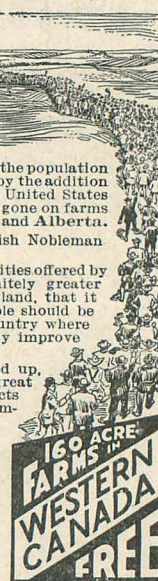
Lord William Percy, an English Nobleman says:

"The possibilities and opportunities offered by the Canadian West are so infinitely greater than those which exist in England, that it seems absurd to think that people should be impeded from coming to the country where they can most easily and certainly improve their position."

New districts are being opened up, which will make accessible a great number of homesteads in districts especially adapted to mixed farming and grain raising.

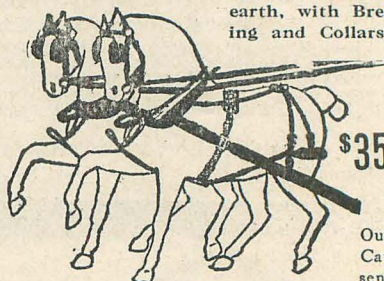
For illustrated literature and reduced railway rates, apply to Superintendent of Immigration, Ottawa, Canada, or to the Canadian Government Agent,

W. E. Black, Clifford Block, Grand Forks, N. D.



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We are in the market for North Dakota grown TIMOTHY, BROMUS and MILLET of all varieties.

Send us samples of any high grade grass seed or seed grain you have for sale, and we will make bid on same F. O. B. your station. WRITE US TODAY.

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Fargo,

North Dakota

RAISING A DAIRY HERD FROM RANGE COWS IN NORTH DAKOTA

MARCH—SEVENTH YEAR

By Mr. John Christenson, New Salem, North Dakota

(In N. D. Farmers' Institute Annual)

In the spring of 1883, the first week in April, the advance guard of a colony of German settlers from Wisconsin, Indiana and Illinois, mostly from around Chicago, landed in Morton county, west of the Missouri river and located on the prairie on the main line of the Northern Pacific railroad, at that time incomplete, at what is now the village of New Salem. (The writer was one of the very first ones and has been there ever since.) After taking homesteads and erecting shelter of the most humble kind for the people, mostly dugouts, and sod barns for what little stock the settlers brought along, the question, what shall we do now to make a living in this new and untried country, became serious. From the experience of others we could not learn anything for there was nobody here trying to make a living from farming when we arrived. The prospect looked blue. We were shown a few ears of corn at Mandan, said to be raised near there, but hardly any broken prairie was visible. We were told in the east of the fortunes made in Dakota territory by raising wheat and that we could get rich quick by raising wheat and then we could go back east and live in fine style. So accordingly, we went to work and broke up the prairie, very slowly, of course, for want of power to pull the plow, but some breaking was done, grain put in, mostly wheat and oats, and as the work was naturally done poorly and the seasons of the late eighties were dry, very little harvests were gathered for years. These conditions took the courage out of a great many of the settlers and some even went away after borrowing all they could on their land (\$300 to \$400 was all any one could get on a quarter section) and left their farms for other fields. A number of us stayed and as fast as we could got a hold of some cows, made butter from the milk at home and traded it in the New Salem stores for the most needed things for the house and family. Cash was never paid for butter in those days and the trade was very unsatisfactory to both parties. Chickens were also kept and eggs traded in the same way.

Thus the first years of the settlement passed, and we realized that something had to be done, for a more certain income. Natural pasture and prairie hay were generally plenty and

of good quality. Livestock, cattle, horses and sheep had to come to our salvation. The establishment of a creamery was thought by some of the farmers, who came from the neighborhood of Elgin, Ill., to be the only thing that was certain of success if milk enough could be produced. Before any action was taken, however, W. H. Mann, one of New Salem's old settlers and business men, with a view to improving the grade of butter, started a one-horse power creamery in the basement of his dwelling and sent a team out into the country every day to gather cream. This was some improvement on making butter at home, but too expensive to run as not enough cream could be had. Results for the farmer were not very satisfactory, either, as no test of any kind was used. The good cream was not better paid for than the poorest and the first creamery did not run very long, but it had shown that cash could be gotten out of the butter. Then a movement was made to get a model creamery started in New Salem in 1894. The business men agreed to put up the building, put in the machinery, make the butter, ship the same, furnishing everything for 4 cents per pound for butter made, providing a number of farmers would agree to bring gratis all the rock needed for the building and bring all the milk they had. This was agreed to and work was begun at once and the now famous New Salem creamery was the first one in the state where only whole milk was delivered. Let me tell you right here, it has been running successfully ever since, winter and summer, and has been a great benefactor to both the farmers and business men. A trip thru the country will prove this by the good substantial buildings, both houses and barns and the herds of contented,

well cared for cattle that can be seen on every farm from which milk is delivered to the creameries.

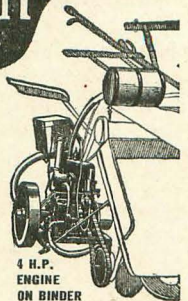
After the success of this creamery was evident it was only natural that new ones were established and at present there are seven creameries shipping their products from New Salem.

Now let me tell you a few of the benefits of this industry. First of all a regular pay day once a month is

Run your Binder with a Cushman Engine

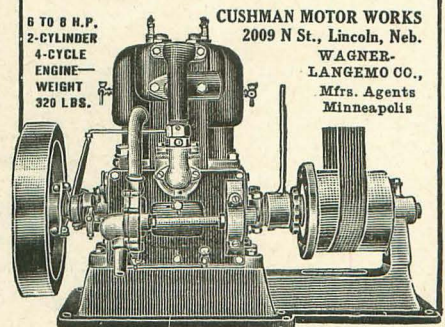
and Save a Team

Use this same engine for pumping and light work, also your grinding and heavy work. It will do both at lowest fuel cost. Throttle governed. Weight under 200 lbs. Move it to where the work is. 10-year guarantee. That's the



Farm Cushman All-Purpose Engine

Use our 6-8 H. P., 2-cylinder, 4-cycle engine for hay baling, grinding, sawing and heavier farm jobs. Double cylinders mean double power. Runs any speed because throttle governed. Change speed while running. Cushman Engines are designed to secure greatest power and strength with lightest weight. It's in the design. Write for catalog.



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ENGINE—
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Also—

Scotch Fife Wheat, Registered	New Great French Lizo Oats
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Quick shipment. State quantity required, when we will name prices.

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CANADA'S GREATEST SEED HOUSE

sure, and the amount of the check is only limited by the amount of the milk delivered. Second, the skim milk will raise very good calves if a little extra feed is added to supply the butterfat taken out and good care is given them. The hogs just grow big on the skim milk with a little ground feed added. Screenings may be fed in summer and the hogs should be finished in the fall with corn. Third, where dairying is carried on in connection with grain raising, the land will yield a better average of all kinds of grain. Fourth, with a herd of well-cared for dairy cows you are bound to get a lot of very valuable manure, which, with the use of the manure spreader, will keep up the fertility of the soil and insure better crops. Fifth, if so arranged that most of the cows in the herd will come fresh in the fall, say from Oct. 1 to Dec. 1, harvest time will find us with little milking to do.

Years ago nearly all of our cows were of the range stock type and as a rule came fresh about April or May. With good pasture they would give a good supply of milk during the summer months, but when fall came with its dry pastures and no feed but prairie hay and not much of that the cows of course dried up and remained dry until fresh again in spring. Now most dairymen try to have a good supply of feed for winter, such as corn fodder, millet hay, and in some cases root crops and in addition a quantity of ground oats and speltz mixed with bran. Cows are now often bred to freshen, say about Sept. 20 to Dec. 1, and they are kept in comfortable barns and fed long before any snow falls. In this way they produce a flow of milk during the winter and after spring comes with green grass the milk flow is kept up most of the summer months.

Now, you will likely want to know what one can expect a good cow to bring you in return for feed and labor. This of course, depends on different things as the kind of cows you have, the pasture, care, and feed that is raised on the farm, the time they come fresh and also the help you have at home to do the work. From \$20 to \$40 is about the average profit from reasonably well kept cows in this neighborhood. There is a big difference in the profit of different cows as we found by weighing and testing ours. The year's results proved that while a few of the best produced butterfat to the value of \$50 above all feeding expense, a number of the poor ones did not do half so well and one just paid expenses. The latter kind get off the farm quick.

HELP IN PLANNING PROGRAMS

The various Departments of the State Federation of Women's Clubs of North Dakota are endeavoring to assist the clubs of the state in the particular subject in which they are interested. Those clubs who are studying Home Economics will be interested to know that they may secure help in planning their programs, in their regular work, or in the organization of a club either thru correspondence or by making arrangements for a lecture or demonstration. The clubs of the following counties who wish help in the subject of Home Economics should write to Miss Minna A. Stoner, Department of Home Economics, Agricultural College, North Dakota: Wells, Foster, Griggs, Steele, Traill, Stutsman, Barnes, Cass, LaMoure, Ransom, Richland, Sargent and Dickey.

WINNER OF FIVE-DOLLAR PRIZE

Ray Prindle, La Moure, N. D.

It was the privilege of the publisher to attend the boys' and girls' institute at the Agricultural College last December. After these young people had been urged to write a description of their visit he offered a prize of a five-dollar gold-piece for the best account of the institute week.

Nearly one-third of those in attendance submitted their accounts of the institute and so excellent were the papers that it was with difficulty a choice was made. A regret was felt that second and third prizes had not been offered. The publisher, therefore, has determined to award Ray Prindle, LaMoure, a three-years' subscription to the North Dakota Farmer in addition to the first prize, a five-dollar gold-piece.

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To the following second prize winners a two-years' subscription to the North Dakota Farmer:

Vera E. Morris, Warwick; Angelene Hunt, Fayette; Segne B. Elgaen, Penn; Arthur Link, Niagara; Anna Earl, Grand Forks; Henrietta Ness, Wolford; Florence Wyman, District No. 7, Hettinger Co.; Maude Sachijen, LaMoure; Arthur R. Bon, Robinson; Roy Husby, Mott.

To the following third prize winners a one-year subscription to the North Dakota Farmer:

May Bolack, Grand Forks; Eva and Leah Mailloux, Greenville District, La Moure Co.; Ethel Schwartz, Mott; George Haensel, Pearl Lake Twp., La Moure Co.; Charity Stull, Glasston; Leonard B. Reager, Giese; Mary Hensen, Glenburn; Marvin Delano, Mott; Anna Lund, Ojata; Octavius Johnson, Northwood; Mary Cunningham, Reynolds; Henry Schmidt, Emerado; Agnes Campbell, Glasston; Roxie Boicourt, Belfield; Palma Holt, Grand Forks Co.; Wm. T. Good, Grand Rapids.

It is the earnest hope of the publisher that these young people may become leaders in agriculture and domestic science among their fellows and that the lessons learned at the boys' and girls' institute may be helpful to them, not only in their school work but thru life.

FOOD REQUIRED BY COWS

By E. W. Allen, in U. S. Bulletin
No. 22

SEVENTH YEAR—MARCH

The cow requires not only materials for maintenance, but must also have protein, fat, and carbohydrates to make milk from. The milk contains water, fat, protein (casein, or curd),

Plant Will's

**Selected Seed Corn
Marquis Wheat
Bromus Inermis
Early Mountain Oats**

Russian Olive and Caragana for hedge, none equal. If you mention this paper we will mail our 50-cent collection of vegetable seeds for 25 c.

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side we shall be pleased to send THE LEADING AMERICAN SEED CATALOG, —a bright new book of 182 pages, which should be read by all who would have the best garden possible and who are willing to pay a fair price for

is sufficient for the front of a post card. If you will write your own address plainly on the other

Seeds of the Burpee-Quality

sugar, and ash, and these are all made from the constituents of the food. If insufficient protein, fat, and carbohydrates are contained in the food given her, the cow supplies this deficiency for a time by drawing on her own body, and gradually begins to shrink in quantity or quality of milk, or both. The stingy feeder cheats himself as well as the cow. She may suffer from hunger altho her belly is full of swale hay, but she also becomes poor and does not yield the milk and butter she should. Her milk glands are a wonderful machine, but they can not make milk casein (curd) out of the constituents in coarse, unappetizing, indigestible swale hay or sawdust any more than the farmer himself can make butter from skim milk. She must not only have a generous supply of good food, but it must contain sufficient amounts of the nutrients needed for making milk. Until this fact is understood and appreciated, successful, profitable dairying is out of the question.

Many forcible illustrations of its truthfulness have been furnished by the agricultural experiment stations.

For example, at the Kansas Experiment Station a herd of 20 common scrub cows, which "were below the average cows of the State," were tested to see what could be made of them by proper feeding and handling. The average annual yield of milk per cow under such conditions was 5,707 pounds, the poorest cow giving 3,583 pounds; and the average yield of butter fat was 238 pounds, the poorest cow giving 135.7 pounds. The value of the butter fat averaged \$37.75 per cow. To compare this with the conditions in the state, the records were collected of 82 herds in one of the leading dairy sections. The average annual yield was found to be 3,441 pounds of milk per cow, and 104.5 pounds of butter fat, the value of which was \$19.79.

We attribute the greater yield secured from the college scrub herd to three causes: First, at all times their rations were either balanced or contained an excess of protein—the material which builds blood and milk—while the Kansas cow usually, when

on dry feed, has only half enough protein. Second, kindness and shelter. Our scrub cows were petted, comfortably sheltered, never driven faster than a slow walk, and never spoken to in an unkind tone. Third, a full milk yield was secured thru the summer drought by giving extra feed.

Prof. T. L. Haecker, of the Minnesota Experiment Station, made the statement a few years ago that "the average cow in Minnesota is returning in dairy products a sum barely equal to the market price of the feed, simply because of a lack of understanding of how to feed." The average gross return for all the common cows at the Minnesota station, which "are no better than the average cow of Minnesota," was valued at \$44.53 per cow. The average gross return to farmers of the state, as shown by the creamery returns, was only about \$22 per cow. This deficiency of \$22.53 in the returns from the common cows of the state, Professor Haecker believes it is fair to conclude, is "wholly due to

lack of knowledge of proper feeding and care."

The cow must be regarded as a sort of living machine. She takes the raw materials given her in the form of food and works them over into milk. If the supply of proper materials is small, the output will be small. The cow that will not repay generous feeding should be disposed of and one bought that will. There are, of course, certain inbred characteristics or natural qualities which even liberal feeding can not overcome.

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Same collection—3 to 4 feet trees for only **\$1.50**, not prepaid.

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They are acclimated to extreme Cold, Drouth, Hot Winds and Unfavorable conditions.

They are hardy and grown especially to stand unprotected on the Northwest Prairies.

We ship direct to Customers, saving them the Agent's Commission.

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Devils Lake, - - - - - North Dakota.

DAKOTA WELDING & MFG. COMPANY

Large Welding Plant and Machine Shop

Expert welders and machinists of ALUMINUM gear and crank cases; manifolds and housings; CAST-IRON and cracked sectional boilers; cracked or broken cylinders or water jackets; STEEL frames or any broken parts of automobiles or other machinery. We weld cracked steam boilers with our large portable plant at your home.

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Phone 926

FARGO, NORTH DAKOTA

North Dakota Farmer

Entered as second class matter in the postoffice at
Lisbon, North Dakota

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ASSOCIATE EDITORS

PROF. J. H. SHEPPERD, State Farm Notes.
PROF. W. B. RICHARDS, Livestock.
PROF. C. B. WALDRON, Fruits, Forestry,
Insect pests.
GEO. HAUSMANN, Poultry.

Remittances should be made by Draft, Post-office Order or Express Order.

Address all business correspondence to the
Lisbon office.

Vol. 15 FEBRUARY, 1914 No. 8

The country demonstrator will soon become a permanent fixture in every county.

Have you contributed the price of a bushel of wheat toward building a dormitory for the boys at the Agricultural College?

Cornell University is offering a course in horse-shoeing. How is that, compared with Sanskrit, for culture?

Only 27 per cent of the tillable land of the United States is actually under cultivation, and not more than one per cent is under intensive cultivation.
(Sec'y of Agriculture)

The rural school problem is coming to the front as never before. Country children should not be penalized with inferior school privileges. They have burdens enough to bear without beginning life with no school training for their vocation.

The once convenient and popular method of disposing of straw by burning is falling into disrepute. Farmers in ever-increasing numbers are becoming convinced of the folly of thus destroying the natural fertility that should be returned to the soil.

If the government would bust up the beef trust instead of trying to cripple it by purchasing Argentine beef, it would seem more consistent. American beef producers will hardly applaud this method of bringing the beef trust to time.

The numerous farmers' meetings held during the present winter indi-

cate progress on the part of agriculture. The opposition to progressive methods of farm management is fast giving way, and the future looks bright for the agricultural interests of the great commonwealth of North Dakota.

The Quaker Oats company and the Great Western Cereal Company were made defendants in a suit for \$10,000 for alleged violation of the Sherman anti-trust law. Those in middle life will doubtless live to see this matter determined by the courts.

There is a vast difference between a house and a home. Many a fine house elegantly furnished, yet is not a home in the real sense of that word. Also many a modest house—even many a hovel—that is more nearly a home than the elegant mansion. The "rural home," therefore, is significant.

It is a comforting thought that the farmer, even if so inclined, cannot be wholly selfish. His fields of grain and his livestock and animal products may be but the representative of so many dollars to him, but they mean bread and meat to those dependent upon the farmer for their food. The farmer is thus useful to himself only as he makes himself useful to mankind.

Winter is passing. With the livestock well provided for, plenty of fuel on hand, everything handy to work with, plenty of good reading matter to employ the mind profitably during the long winter evenings, the North Dakota winters should invite pleasure seekers from the far South. Our winters at least put some gimp into them.

Sweet clover is coming into considerable favor, at least many farmers are talking in its favor and a few are seeding a small acreage to it. Time and patience will determine its value—time to grow it and patience to teach the farm animals to relish it. There is no question, however, as to its feeding qualities nor as to the ease with which it can be grown. The only thing is to get the livestock to eat it with relish. It is claimed, however, that once they get the habit, like the use of tobacco with individuals, they crave it.

A good time is at hand to permit the plow and the harvester and the other farm tools to stay out in the open, exposed to the elements, in order that they may have a nice antique appearance when the season opens again this spring. Farm im-

plements don't cost anything, of course, so that if their usefulness is impaired by the seasoning, others can be secured without additional expense.

One of the best things accomplished by the Agricultural College is to unite labor with intellect. Far too many are educated in the belief that work of a productive kind is vulgar; that only where one can wear fine clothes, keep his hands soft and live off other folks, or as a result of their misfortunes, does the real gentleman appear. The real man is not above real labor and enjoys the work that aids the growth of things everybody needs, instead of living like a flea on a dog.

The remarkable interest now being manifested by bankers' associations and other big interests in farm matters would seem to justify farmers in taking more interest in their own affairs. Of course, farmers should feel not only proud but grateful for every assistance that is offered them; still, if they would take more interest in their own business affairs, they would not need much help; neither would certain other interests have so much easy money to spend in the farmer's behalf.

The Manitoba government with a rural population of about half that of North Dakota, is putting approximately \$3,000,000 into a new agricultural college, for buildings, and for equipment. The province of Manitoba, realizing that agriculture is its chief support, proposes to develop its farming interests to the very utmost by providing ample means for the education of her boys and girls in terms of farm life, not alone for the production of greater wealth, but to know how to use it. The money thus invested will return tremendous dividends to the province of Manitoba.

It has been fashionable to throw a brick at any man who has the temerity to make a suggestion that would point the way to a better and more independent life for the farmer or the laboring man. He is at once branded as a socialist, if not as an anarchist. Those who reap the major portion of the earnings of both farmer and laborer do not intend to let go their advantage without a struggle. It is strange, however, what black magic dwells in the word "demagog," or in the word "socialist." Men with real sympathies for common justice toward those who perform the world's toil and who would enlist their energies for improving the social and economic condition of those who create the

Continued on Page 16.

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade.
ASK YOUR GROCER FOR THEM.

“BUY”

“EAT”

HOME BRAND

Pure Food Products

“ECONOMY” “SATISFACTION”

Griggs, Cooper & Co.

MANUFACTURING
WHOLESALE
GROCERS,

ST. PAUL, MINN.

Main Offices:
CORNER THIRD AND BROADWAY

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JELLY
DESSERT**
NUTRITIOUS-WHOLESOME

One package, 10 cents, makes one pint of wholesome Fruit Jelly. All flavors from true fruits.

The Purest of Pure Food Products

are packed under the Brands of

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PURE FOODS

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BRANCH HOUSES-Minot, Bismarck, N. D. Billings, Bozeman,
Butte, Great Falls, Mont.

MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WELCOME GUEST at every table where the HOUSEWIFE demands the BEST. THE MONARCH LABEL insures QUALITY in Coffee, Catsup, Pickles, Maple Syrup, Canned Goods or any article bearing the MONARCH BRAND of REID MURDOCH & CO CHICAGO.

ANOTHER PURE FOOD PRODUCT

CEREKOTA

Self-Rising

Pancake Flour

Is a Scientific Preparation of Healthful Appetizing Ingredients
and the Best Flour Milled in North Dakota

GUARANTEED Pure and Wholesome

Ask Your Grocer for a Trial Package.

Bemmels Milling Company

Sole Manufacturers

Lisbon,

North Dakota

EDITORIAL

Continued from Page 14.

state and national wealth, are readily silenced, however, by the well-directed sneer of the well-to-do citizen who may never have earned a dollar by productive toil, or ministered to aught except his personal fortune.

If farmers would organize themselves into community clubs for the discussion and better understanding of their own problems and then co-operate wherever possible for their mutual welfare, they would save a good deal of money on the things they purchase and get a good deal more money for what they have to sell. This is especially true if all the community clubs were to federate and act as one man instead of each one acting for himself. One man against the world has mighty little chance. His defeat is certain. But combined and co-operating, farmers would become the greatest force in America today. They should also be the most righteous force.

Quite a number of state papers contend that the Tri-State Convention sounded its death knell at Fargo when it entered the arena of politics last month. Farmers are not supposed to have any say in matters political. Perhaps if they would listen to professional politicians less and use their own judgment more, the country would come nearer meeting the wants of the people. What's wrong with politics—the people's government—anyway? Have the fellows who have managed the politics of the state got our politics in such a disreputable condition that decent farmers must keep hands off? In other words leave the politics to politicians?

The principal reason that boys do not wish to stay on the land is the fact that they have no control over the price of their products. The watermelon they produce in Missouri and sell for 10 cents is sold to the consumer in Fargo for 60 cents. Transportation companies and middlemen get five times as much as the farmer does. The Connecticut farmer gets a cent and a half for a cabbage head, for which the consumer pays 13 cents. The same is true quite generally, tho not so outrageously bad, of tomatoes, apples, potatoes, eggs, etc.

Is it any wonder the boy prefers to be a middleman rather than a farmer?

The weed problem is one of the most serious the farmers of the state have to contend against. And weeds

are becoming more numerous with each passing year.

Seasons of drouth result more often from weeds' robbing the grain of the moisture in the soil than from lack of rainfall. In other words, the climate gets blamed for insufficient precipitation when the weeds should be blamed for robbing the soil of moisture. What is the remedy? Destroy the weeds. Practice a system of farm management that discourages rather than encourages the multiplication of weeds. Corn and potatoes if thoroly cultivated, prove excellent weed destroyers.

All the bran and shorts from North Dakota wheat should somehow be retained in the state and fed to domestic livestock. The soil needs the fertility to insure its permanent productiveness. The screenings also should be retained by farmers for stock feed. There is no good excuse for shipping the latter out of the state. The labor required to separate the screenings from the grain would well repay every farmer for his time and trouble; for otherwise he gives them away and also pays the freight on them on the Twin Cities where they are sold at a good round figure. Much of the wealth of the state lies in by-products of this character and should not be wasted or given away. Mixed farming requires plenty of bran and shorts.

It is to be hoped that the next Legislative Assembly will adopt the so-called "Torrens System" and dispense with the "title trust" which makes the transfer of real property, under our present system, so expensive and unwieldy. Moreover, the present system is far from being reliable. The most that can be said for it is that it makes good money for abstractors and fat picking for lawyers. The "Torrens" system makes it as easy to sell a town lot or a farm as to sell a pair of boots, with no question or aftermath as to the validity of the title. The removal of this incubus on transfer of titles will save thousands of dollars in needless fees, to say nothing about expensive litigation that often follows the present system of transferring titles to real estate.

There should be four or five hundred Granges organized in this state before next harvest. The Grange is the only form of permanent organization at present for farmers. Moreover, the Grange in no way interferes with any other organization, but rather gives aid by affording opportunity for farmers and their families to commune together without inter-

ference of middlemen. The farmers' clubs are good so far as they go, but they do not go far enough. They do not represent a cohesive force, but rather provide for isolated social and business gatherings. What farmers want is a federation of all their forces—united action. The farmers' club is often used to discourage the more permanent form of organization,—the Grange. The state needs the Grange in large numbers.

That was an awful thing the farmers did last month in Fargo when they asked President Worst to be a candidate for the United States Senate. They never as much as consulted the politicians and also had the disrespect not even to consult those who make it their business to arrange such matters as to who may be suitable candidates for public office and by whom the public shall be notified. But for a lot of farmers to presume to have a choice of candidate for the United States Senate—perish the thought! The Tri-State Convention is doomed henceforth. Its sins are unpardonable. From the great love those critics have for the Tri-State, but for which they never did a thing, they are entitled to sympathy. One old farmer had the audacity to remark—outloud at that—"Who's doing this thing any way?"

Mr. Farmer: Is your wife as well provided with modern conveniences for doing her work as the farm is for doing your work? Does she pump and carry water for the kitchen, occasionally saw the fire wood, milk the cows and feed the pigs? Have you noticed that she is growing prematurely old? Perhaps not. Well, far too too many women, however, are sacrificed upon the altar of the farmer's ambition for making money. Too many women are not given a "square deal" on the farm. Often, doubtless, she is unnecessarily burdened thru thotlessness.

Rearing children and doing her work under the most favorable conditions is all that she should be required to do; for her life is not to be weighed against gold.

Livestock are sure mortgage lifters. They are not easily affected by adverse climatic conditions. They will eat almost anything and convert what they eat into money. Even the manure they make is worth money and good money at that. The farmer engaged in animal husbandry to a reasonable extent, seldom suffers on account of extortionate rates of interest. He is more apt to be a money loaner than a borrower of

money. The fellow to be pitied is the all-small-grain-farmer. What with the burning of his straw and getting his soil filled with weeds and fungous diseases, and depleted of fertility, the future is indeed dark for him. His method of farming also makes it dark for the country.

The ups and downs in the prices of farm products do not so nearly represent the law of supply and demand as the game that is played by various middlemen. The farmer is the victim in almost every instance; for the price

usually is highest after farmers have disposed of their products. To make the game more interesting farmers' obligations are arranged to mature about threshing time. This discharges the bulk of merchantable grain upon the market early in the season at which time the price can easily be depressed. If farmers were to co-operate, they could handle their own grain. The amount they get skinned out of each year would afford ample working capital to organize a system of distribution that would enable each farmer to get the full value of all his farm products.

Livestock Department

FARM AND STOCK NOTES N. J. Shepherd

Educate your horses, don't break them.

Growing colts need plenty of exercise.

Severe bits are often the cause of balky horses.

Breed the horse first for strength and endurance and then style.

Color is subservient to flavor in butter. Taste decides the merit of the article.

No animal is profitable at a stand still. Keep all young animals growing and gaining.

In nearly all cases the best animals are the offspring of mature parents on both sides.

Succulent food increases the flow of milk, but does not materially increase the proportion of water in it.

No matter whether the lambs are raised for early market or for wool they should be kept growing steadily.

One advantage in fully developing and training your horses on the farm, is in increasing the opportunities for selling them.

As a rule the milking qualities of a cow depend more upon those of her sire's mother than upon those of her own.

Wool soaked with water chills the skin of the sheep, while a coat of dry wool will protect it from the severest cold.

Fast walkers are much more needed than fast trotters and perform a much more important part in the industrial economy of the country.

It is the steady gaited horse that covers the greatest numbers of miles in a day, and does it with the least injury to himself.

The aim in keeping stock should be to secure the most rapid and largest growth at the least cost compatible with the end in view.

As a rule the fertility of the farm can be more easily kept up by sheep than by dairy husbandry, but there is more profit as well as more labor in the latter.

It costs just so much to maintain the life and health of the cow and something over this amount must be fed to insure a liberal flow of milk; and the more food the cow can be made to consume and turn into milk the greater will be the profit.

CLASSIFIED ADS.

One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

LIVE STOCK

FOR SALE
GALLOWAY CATTLE
J. W. & F. T. PETERSON, Litchfield, Minn.
POLAND CHINA PIGS, also Shropshire
sheep Seed grain. **GEO. N. SMITH,**
Amenia, N. D.

FAMOUS O. S. C. SWINE. Am now booking orders for fine pigs of April farrow. Price: \$19 each; \$35 a pair. All Stock recorded free. Shipping point: Mankato.

ROBT. A. HAEDT, Eagle Lake, Minn.


ASH GROVE FARM. Knudtson & Son, Props.
Breeders of Pure Bred Percheron Horses and Short Horn Cattle, Both Sexes. Stock for Sale.
Route 1 Fullerton, N. D.

J. S. BIXBY
RED POLL CATTLE. If you want dual-purpose cattle, I have the best. Rhode Island Reds, also in stock. **LISBON**
NORTH DAKOTA

Mulefoot Hogs are Healthy, Hardy and Prolific.
Jno. Dunlap, Breeder, Williamsport, Ohio.

For Large Yorkshires of either sex and bred gilts, address **L. A. Knoke, Badger Den Stock Farm, Willow City, N. D.**

FOR SALE. Work Horses, Drivers, Stallions and Double-standard Polled Durham Bulls.
LEAL STOCK FARM Leal, N. D.

 **Purebred Registered**
HOLSTEIN CATTLE
The Greatest Dairy Breed
Send for FREE Illustrated Book
Holstein-Friesian Assn., Box 135 Brattleboro, Vt.

ENVILLA STOCK FARM

Envilla Stock Farm, Cogswell, N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat Dogs and other breeds, Angora Cats. All varieties of chickens; turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Live Foxes, Skunks, Mink and Badgers.

MISCELLANEOUS

FOR SALE
One of the best 640-acre stock ranches in the state of Montana. Close into town. First-class farming lands near town. All under irrigation. Price \$15 to \$30 per acre. Write to
F. R. KRAMER & CO.
Malta, : : : : Montana

WANTED. Live Foxes, Skunks. Mink and Badgers, any time.
Envilla Stock Farm, - - Cogswell, N. D.

WANTED AGENTS either sex, for **Economy Administration Cook Book**, the much talked of and biggest seller of the year. \$10.00 to \$15.00 per day right now. Free descriptive circular, or send 25c. for Outfit at once, and first choice of territory. Best Terms. Address, **A. B. KUHLMAN**, Publisher, 136 W. Lake St., Chicago, Ill.

Twenty Acres, Irrigated, Part-bearing Orchard. 1000 boxes this year. I am the owner and muso sell in 30 days. Write me for particulars. Photo
W. H. ELLIS Coeur d'Alene, Idaho

WANTED: Improved Farms and Wild lands. Best system for quick results. Full particulars and magazine free. Don't pay big commissions.
Western Sales Agency, Minneapolis, Minn.

ALFALFA SEED DIRECT. For Farmers' Price and Sample, Write **J. L. Maxson, Buffalo Gap, S. D.**

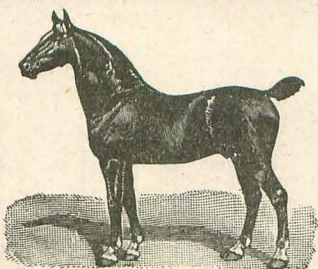
CENTRAL MINNESOTA
100 Improved Farms; low prices; easy terms; "A good title always." Write for list.
C. D. BAKER, Fergus Falls, Minnesota. Bx. N

WANTED! To hear from owner who has good farm for sale. Send description and price. **Northwestern Business Agency, Minneapolis, Minn.**

\$100 TO \$400 PER MONTH
Selling Highgrade and General Lubricating Oil. Greases, Paints and Exclusive Specialties. Salary or Commission.
FAIRFAX REFINING CO., Cleveland, Ohio.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Every animal has just so much possibility of growth in him and no more. By using the wisest course in feeding and caring for him, you can develop this to the limit line; and by just so much as you fall short of this will the development of the animal fall below his native capacity.

Considering the fact that a large per cent of even the best milk is water, the necessity for giving cows in milk only the best water will be appreciated. Bad water will make bad milk, no matter what the other food may be and bad milk will make bad butter no matter how it is handled.

Whenever a check in growth occurs the animal necessarily must be stunted in a degree and whenever there is a falling away in condition there must be a check in growth and a loss to the owner equal in value to the amount of feed required to make the number of pounds lost in flesh.

It is most desirable that the early lambs be pushed to maturity as quickly as possible. To do this it will be necessary not only to furnish warm mothers, but arrangements should be made to feed the lambs also. A small pen should be made where the lambs can be fed unmolested by their mothers. Commence feeding very lightly and gradually increase as their growth and wants may necessitate. The food should be of a suitable kind and easily digested and while liberal feeding is to be commended, care must be taken not to overfeed.

SYMPTOMS OF HOG CHOLERA

L. VanEs, Dr. Veterinary Department, N. D. Agri. College

The symptoms presented by a hog affected with hog cholera are not usually sufficiently clear to enable one to recognize the disease at first sight. In some outbreaks the disease was not suspected until dead hogs were found.

In the acute form of the disease, which is the most prevalent one, lack

of appetite and a disposition on the part of the affected animal to separate itself from the other members of the herd are the earliest features noticed. The affected hog will bury itself in the litter and is not easily induced to stir about. When the animal walks, a pronounced weakness may be noticed, especially of the hindquarters. The animal wabbles and sways about in such a manner that quite a few observers take the animal to be affected with some form of paralysis.

While ordinarily those symptoms are the first ones noticed, they are usually preceded by a distinct increase in the body temperature. In normal hogs this ranges between 101 degrees and 104 degrees F. according to the weather conditions, exercise, etc. When, however, we meet with

temperature of from 104 degrees to 107 degrees F. in hogs that were not chased about and when the weather is cool, it may be evidence of cholera infection.

IF YOU WANT

ANGUS CATTLE
OXFORD DOWN RAMS
EMBDEN GEESE
WHITE
HOLLAND TURKEYS
BLACK RABBITS

GET OUR EXPRESS-PAID PRICES

WILLOBANK FARM, LARIMORE, N. D.

W. F. JACOBS Livestock Auctioneer

Thoroughly Posted on Pedigress

Terms Reasonable LISBON, N. D. Write for dates

ST. PAUL UNION STOCKYARDS COMPANY, SOUTH ST. PAUL, MINN.

Comparison of Receipts and Shipments of Livestock for January, 1914

Receipts						
Railroads	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P.	349	176	1024	250	22	36
C. G. W.	1081	188	7308	530	57	157
C.M.&St. P.	3534	605	20840	4731	44	461
M. & St. L.	1835	564	9257	1910	2	219
C.,St.P.,M.&O.	3373	681	15470	2656	87	381
C. B. & Q.	365	50	3355	320		62
M.St.P.&S.S.M.	5033	1469	23440	1328	8	536
Gt. Nor.	6862	2437	41163	19297	1	928
Nor. Pac.	4225	67	22859	22344	49	542
St. P. B. & T.						
Driven In	643	134	862	179	11	
Total	27300	6979	145578	53545	281	3322
Inc. over 1913	3895		30325	19206		558
Decrease		303			59	
Jan. 1 to date						
Inc. over 1913						
Decrease						
Average Wts.	821	201	218	86		

Shipments						
C. R. I. & P.	821	6	200		12	35
C. G. W.	2184	71	155	2545		87
C. M. & St. P.	4893	133	28575	9298	43	480
M. & St. L.	714	2	4022	572		62
C.,St.P.,M.&O	3437	72	4358	2483	31	159
C. B. & Q.	1098		11528	13158	19	206
M.St.P.&S.S.M.	757	75		5320	26	56
Gt. Nor.	689	9	212	1392	35	36
Nor. Pac.	882	64	400	106	60	40
St. P. B. & T.						
Driven Out	416	224	185	134	63	
Total	15891	656	49635	35008	289	1161
Inc. over 1913	2001		21862	16257		347
Decrease		572			59	
Jan. 1 to date						
Inc. over 1913						
Decrease						

WANTED—Men and Women to introduce new line Patent Pension, Ball-Bearing, Fit-like-a-Glove Shears. Biggest sellers ever produced. Agents making \$5.00 to \$8.00 per day, full or part time. Best commissions or salary. Free particulars. Address quick, **IDEAL SHEAR & CUTLERY CO.**, Marine Building, Chicago.

FOR SALE: 300 Bushels Pedigree Seed Barley, free from foul seed; 99.9% pure, 100% germination. Winner of Blue Ribbon last year. Write for prices. **Joe Stahl, Pekin, N. Dak.**

FOR SALE. Finest Half Section in State. Level loam; 1000 acres; Lake bottom hayland free; 30 acres fine timber. Fine buildings, water, school and neighborhood. Near four towns and two railroads. \$35 an acre, cash; \$37.50, part cash. Poor health, reason for selling. Address, **OWNER**

Box 17, R. 1 - Devils Lake, N. D.

SALESMEN

\$100 to \$400 per month, selling Highgrade and General Lubricating Oils, Greases, Paints and Exclusive Specialties. Salary or Commission. **FAIRFAX REFINING CO., Cleveland, Ohio.**

Digestive disturbances are often an early feature in such cases. Vomiting is not uncommon and diarrhea is frequently observed, altho the latter may be preceded by a constipation of variable duration. Diarrhea and constipation not rarely are of alternate occurrence. The bowel discharges in diarrhea are liquid, of a light or dark color and often emit a very offensive odor. In constipation the ejecta are hard, dark or black in color and often show a coating of partially dried mucus, which in itself may be tinged with blood.

Respiratory complications are common. The animals often show a cough as a result of irritation of the air passages. Pneumonia is a frequent accompaniment of hog cholera and animals in the latter stages of this complication may show great distress in breathing.

In many cases and especially so in young pigs the mucous membranes of the eyelids are red and swollen and the latter may be stuck together by the dried up purulent discharge.

The skin of the abdomen, near the arm pits, behind the ears, under the jaw and tail, and that on the inner side of the thighs, often show a distinct redness, which during the latter stages may deepen into a dark purple. In other cases red blotches or small blisters may appear on the skin surface.

In the chronic forms of hog cholera the more prominent features are emaciation and digestive disturbances like alternating diarrhea and constipation. There are commonly respiratory troubles, as chronic pneumonia is a rather frequent complication. Such cases often show a fair appetite so that one is often led to believe that

recovery will occur. It is but rare, however, that such cases turn out well, while in addition they are apt to become a factor in the maintenance of infection on a given farm.

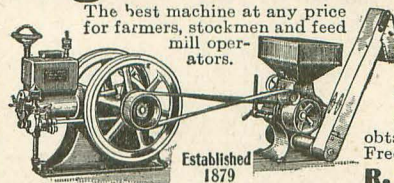
THE VALUE OF FORAGE CROPS FOR GROWING PIGS

Farmers and pig owners do not al-

ways appreciate the value of green feeds and succulent pastures for their animals. Too often the hog is considered a scavenger and his ability to use waste is regarded as his chief value. However well he serves this purpose, he will pay well for good care, feed and housing.

Forage crops are especially beneficial to young growing animals. It

Engine & Feed Grinding Outfit



THE HOWELL ROLLER FEED MILLS have been wonderfully successful everywhere. They wear a life time, grind twice as fast with the same power as the best burr or stone mill made. Good money in custom grinding. Grinds Graham and Rye Flour as well as feed. Engine is of latest and most up-to-date design. Runs at proper speed to obtain best grinding results. Simple and Durable. Free Catalog D3 tells everything.
R. R. HOWELL & CO., Minneapolis, Minn.

ST. PAUL UNION STOCKYARDS COMPANY, SOUTH ST. PAUL, MINN.

Comparison of the Origin and Disposition of Livestock for January, 1914 Origin of Livestock Received

States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota.....	17488	5869	88350	13789	36	1992
Wisconsin.....	2983	797	45565	1441	5	341
Iowa.....	70	1	.....	.....	57	216
Far South .....	.....	.....	.....	.....	82	4
So. Dakota ...	1053	44	12001	996	44	207
No. Dakota...	4167	251	29335	3133	57	546
Montana.....	210	.....	183	34028	.....	166
Far West.....	.....	.....	.....	.....	.....	.....
Manitoba&NWT	981	17	144	.....	.....	50
Far East.....	19	.....	.....	.....	.....	1
Returned.....	329	.....	.....	158	.....	9
Totals.....	27300	6979	145578	53545	281	3322

Disposition of Livestock

	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
SoSt.Paul P'k'rs	11489	5410	95456	15678	.....	.....
Cy.&St. Butch	829	84	12093	88	.....	131
Outside Packers	342	.....	29266	2167	.....	292
Minnesota.....	3347	383	2939	5396	189	176
Wisconsin.....	1282	9	.....	374	36	50
Iowa.....	3139	16	3823	414	20	135
Nebraska.....	129	.....	.....	.....	.....	4
Kans. & Mo.	341	.....	.....	.....	.....	10
So. Dakota ...	1722	127	.....	.....	.....	54
No. Dakota.....	702	13	.....	.....	3	20
Mont. & West	571	19	.....	.....	.....	19
Far South .....	.....	.....	.....	.....	.....	.....
Manitoba&NWT	.....	.....	.....	.....	.....	.....
Mich. & E. Can.	.....	.....	358	.....	.....	3
Chicago	1795	5	1156	25785	.....	208
Ills.(ex Chicago)	1335	.....	.....	626	.....	47
Eastern Points	27	41	3
Returned.....	330	158	9
Totals.....	15891	656	49635	35008	289	1161

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I have forty-five thoroughbred Shropshire rams for sale. Coming two and three years old. Prices right. Call and see what I have to offer or write.

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is possible to grow them much more profitably and successfully when a good green field of palatable and nutritious pasture is provided. Experiments and practical farmers' experiences prove that gains in weight are made at less cost on forage than in the dry lot. Brood sows can be carried thru the season on pasture at less cost than when grain fields are entirely depended upon. Foraging induces the animal to exercise and obtain fresh air, and these prevent diseases being contracted, and when the animals are put in the fattening pen their gains are unusually rapid and profitable. The green feeds eaten are of much value just to keep the pig's digestive system in good condition and the appetite keen.

The entire hog herd can be run on forage crops and will profit by this method of management. Younger animals seem to derive the most benefit, and fattening hogs the least. Herd sows and the herd boar are benefited by having green feeds. It is a good plan to have the brood sow running on green pasture at farrowing time, as this is conducive to a strong, healthy litter of pigs. She should be kept on green forage from the time she farrows. The young pigs will soon learn to eat, and the exercise and the green food in its natural state will start them along in good condition.

The method of feeding when on pasture will necessarily vary according to the kind of crop used. If the crop grown be rape, alfalfa, clover, cowpeas, soy beans, or other crops high in protein content, the grain ration need not be supplemented by feeds high in protein. If blue grass, rye, oats, or other non-leguminous crops are grown, it is best to add a small percentage of feeds high in protein to the grain. Corn or barley usually furnish the bulk of the grain ration, and when necessary these can be supplemented by adding one-tenth linseed-oil meal or one-sixteenth tankage. The rate of feeding will depend on the gains desired. Considering a full grain ration to be 4 pounds daily per 100 pounds live weight, we may say that for ordinary work with growing shoates a one-half grain ration, or 2 pounds a day for each 100 pounds live weight, will give satisfactory results. If it is desired to make faster gains a heavier grain ration can be

used, and if it is desired to maintain the animals as cheaply as possible a smaller percentage should be fed.

It seems doubtful if it ever pays to try to keep pigs on forage crops alone. These crops are sometimes sufficient to keep the pigs growing, but the gains are not usually made economically. Usually the pigs are kept at a loss in live weight. Where brood sows are kept they should be given enough grain to keep them in good thrifty condition. The fact that the forage crops have high value when grains are fed does not mean that they should be fed alone.

The crops best adapted to grazing with pigs are alfalfa, rape, clover, blue grass, bermuda, rye, oats, soy beans, and cowpeas. The nature of the soil, the climate, and the rainfall are influences that should govern the

selection of the crops to be used. Alfalfa is the greatest forage crop on soils suited to its growth. Rape and clover are also excellent feeds, and both are high in protein, the element needed to balance ordinary grain feeds.

Farmers are urged to plan some system of forage crops for their hogs. Now is the time to plan some fields to be sown to crops adapted to grazing. If permanent pastures are available, fence off a portion for the pigs and plant some crop to keep the pigs growing when the permanent pastures dry up, and the returns from the year's work with hogs will be proportionately increased. Give the pig an honest chance to make you money by giving him green feeds in their natural state, and his growth, health, and pork-making ability, will be increased.



Poultry Department



VALUE AND PRESERVATION OF HEN MANURE

A recent bulletin of the Maine Agricultural Experiment Station shows that the poultryman or farmer can materially add to the profits of his business by properly caring for the droppings of his fowls. For example, it is shown that the droppings from 1,000 fowls if preserved without needless loss are worth at least \$300 per annum, and this estimate is based on the assumption that less than half of the droppings, or only 30 pounds per hen per year, can be collected.

According to the Maine station, the droppings should be collected daily and mixed with substances which will (1) prevent loss of nitrogen, (2) add sufficient potash and phosphoric acid to make a better-balanced fertilizer, and (3) improve the mechanical condition of the manure so that it can be applied to the land with a manure spreader.

This can be done as follows: To each 30 pounds of the manure add 10 pounds of sawdust, good dried loam, or peat, 16 pounds of acid phosphate, and 8 pounds of kainit. Such a mixture will contain about 1.25 per cent of nitrogen, 4.5 per cent of phosphoric

acid, and 2 per cent of potash, which, used at the rate of 2 tons per acre would furnish 50 pounds of nitrogen, 185 pounds of phosphoric acid, and 80 pounds of potash, and at the present price of fertilizing ingredients is worth about \$10 per ton. The mixture would furnish a well-balanced stable fertilizer, which, altho not fine enough to work well in drills, can be successfully applied with a manure spreader. The treated manure should be well-sheltered until time to apply to the land—that is, shortly before plowing.

OLD TIME THEORIES

Michael K. Boyer

There are still many who believe that it is necessary to have a male bird in the pen to induce egg production. If that were so, it would be a sad thing for the large egg farms, where table eggs alone are desired, and where pens are never mated. The cock bird has nothing whatever to do with egg production; his mission alone is to fertilize the eggs that we may reproduce our stock.

Another theory is that mated pens lay more eggs than unmated ones.

FENCE POSTS

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QUALITY—UTILITY—EXHIBITION

Single Comb Rhode Island Reds, Barred Plymouth Rocks, White Plymouth Rocks, Light Brahmas, Buff Wyandottes.

BIRDS OF HIGHEST QUALITY: Winners in the following shows 1913: Minneapolis and St. Paul, Minn., Fargo & Valley City, N. D. Mating list free. **WOLVERTON, ROUTE 1, MINN.**

On the farm of the writer part of the yards are mated and part are not. The eggs from the unmated flocks are used for table purposes, and contain culls from our regular breeding stock, such as birds with bad combs, or wry tails, or some other disqualification. But the blood is the same as our breeding flocks, so that the laying qualities of the one equal that of the other. A carefully kept record, and this record which extends over a period of ten years, shows that the unmated pens have averaged as high as the mated ones.

Another: Mated hens are the first to become broody. Last year over half of our unmated birds became broody before one of the mated pens. The year before they were about equal. Back of that we have no record, but it again goes to show that the male has no other influence than to fertilize eggs.

Another: That the small, or "pigeon" egg, is the last of the litter. Superstitious folks used to say such were unlucky eggs, and should never be brought in the house, but instead thrown over the house chimney. Our records show that two days after laying these small eggs, the normal size was resumed.

Another: Nest eggs are necessary for egg production. No nest eggs are used on the farm of the writer excepting to place under broody hens to test their broodiness. We cannot recall of ever seeing nest eggs on any of the large farms of the country. Nest eggs may be valuable to teach pullets to lay in certain nests, but certainly they have nothing to do with influencing the pullet or hen to lay. When the egg is ready for delivery the hen is bound to drop it.

Another: Allowing the eggs to accumulate in the nest causes increased laying. Why? The theorist claims the hens will lay better if the eggs are not gathered until night, "You may have observed that the nest first occupied in the morning receives the majority of eggs for that day. There seems to be a sort of competition

among them to see how many eggs they can get together in one place. If removed several times a day they seem to lose their incentive for doing their work. Think back and you will see that she is only following a natural instinct in not wishing to deposit any more eggs where all others have been destroyed or taken."

That is an argument upon which a sermon could be preached. That it is incorrect is testified to by the trap nest men, who gather and record each egg as laid. No eggs are allowed to remain in the nest. Does this removal lessen the number of eggs? That can be answered Yankee fashion by asking the question: "Was the 200-egg hen ever known before the trap nest was invented?" These theorists should examine the egg records on the farms where trap nests are in operation, and they would be surprised, to learn that fifty hens selected for egg-production, and regularly trapped, are turning out two to one more eggs than the same number on farms where the eggs remain in the nests until night. And why that difference? For the reason that the trap nest man each year picks out his layers and breeds only from them. The good qualities are annually imparted to the new generation.

Another old theory is that a severe thunder and lightning storm will kill the unborn chicks in the shell, should that storm come up a week or so before the hatch is due.

While living in New England, the writer one day made a trip to the poultrymen of Lowell, Mass., and among the places visited was the poultry plant run by William Nichols. We were told on this visit that one day while Mr. Nichols was in the barn looking after a number of setting hens, a thunder and lightning storm arose. All of a sudden the lightning struck the edge of the roof of the building, tearing out a big piece, and then, traveling to the front, ripped off a board. All this happened while rolls of thunder fairly shook the building.

The next day the neighbors, becoming acquainted with the facts, assured Mr. Nichols that the eggs under those hens would not hatch; that such a storm invariably killed all life within the egg under incubation.

Nevertheless, Mr. Nichols did not break up the hens nor throw away the eggs. He was anxious to see what the results would be. In every case the hen came off with two-thirds of a hatch.

Another: That eggs for hatching must never cross the water. This fact was so set upon the minds of many breeders that they refused to

Barred Plymouth Rocks

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Rose Comb Red Cockerels for \$1.50; and Fawn and White Indian Runners, \$2.50 per pair, if taken now.

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White and Columbian Wyandottes, Light Brahmas, and S. C. White Leghorns. Over 30 years a breeder. Stock and eggs for sale. Michael K. Boyer, Box 27, Hammononton, New Jersey.

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EGGS FROM BUFF ORPINGTONS AND S. C. RHODE ISLAND REDS at special low prices Bred to lay. F. M. PEZALLA, Cayuga, N. D.

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WHITE WYANDOTTES. If you want eggs from an early maturing, heavy laying, prize winning strain of White Wyandottes write me. I am developing a special laying strain by use of the trap net. Prices reasonable. Write M. C. JAMES, Valley City, N. D.

Silver Campines and Buff Wyandottes. Great layers of large white eggs. Eggs and young stock for sale in season. E. K. Myhre, Valley City, N. D.

EXTRA LARGE PURE-BRED M. B. TURKEYS

Hens, \$4.00; Gobblers, \$5.00; Rouen Ducks, \$1.50 each. S. C. Brown Leghorn Cockerels \$1.50 each; 4 for \$5.00. Also Poland-China Hogs (The Big Easy Keeping Kind). I will use you right. Write Mrs. Emma Timmerman, St. Peter, Minn.

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Of all First and Special prizes. Once again my Barred Rocks prove their superiority at the North Dakota State Show at Fargo, Jan. 1914, by winning as follows:

1st, 2nd, 3rd Cock; 1st, 3rd, 4th Hen.
1st, 2nd, 3rd, 4th Cockerel.

1st, 2nd, 3rd, 4th Pullet; 1st Pen.

Cash special for best display and Silver medal for Best Barred Rock in the Show. Circular free; it tells all about my fine matings. Write today

ENOCH J. PETERSON
Alexander, - Minnesota
Formerly: Peterson Bros., Harwood, N. Dak.

make foreign shipments. Today eggs are sent to all parts of the world and with good results.

Another: The egg-laying type of hens. This theory gained some prominence in the poultry press. One breeder said the hen should have a broad, deep, round body of moderate length and not too chunky. Another fixed a type exactly reversed to the former. Another, a squarely built blocky, well-proportioned hen, wide on the back, and with legs well apart. This same writer also said that the legs and neck should be of medium length, and the finer the texture of the face the more eggs would be produced. Another said the hen should have a long body and stand well upon her legs.

In this connection H. S. Babcock said that he did not think a "hen with short legs, chunky body and small head" had anything to do with it. He believed that a hen should be of

rather light build, indicative of great activity, and of medium, or perhaps rather under medium size for the breed.

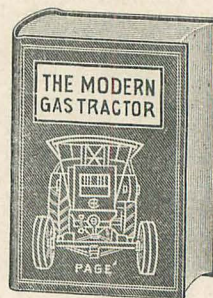
This egg-type theory kept going the rounds until the trap-nest men made experiments, and one contention after another soon dropped. The trap-nest proved, while there was no egg type, that, as a rule, the smaller members of a flock were the most steady layers. Nearly all the record breaker hens proved to be rather undersize for their standard.

The trap nest also showed that hens with large combs proved to be better layers than those with small or medium combs. In a flock of Leghorns, the best layers had the largest combs. In Wyandottes, single comb birds—they will occasionally throw such—give the most eggs, as a rule. The famous Silberstein Light Brahma hen, which laid 231 eggs in a trap nest, was a large combed bird.

Another theory was that white birds are more delicate than colored or par-colored. How this idea ever originated we are unable to say. It is ridiculous. What more hardy bird than the Light Brahma or the White Leghorn? In fact, we do not know a white breed that is delicate, certainly not those familiar to American breeders.

Another: Lice cause gapes. The theory advanced was that the lice on the head of the chick finally crept in the nostrils and then down the throat, causing the bird to strangle. On this gape question we believe there have been more theories than on any disease to which fowldom seems heir. Angle worms, climate, disease germ, etc., were attributed as causes. These theories have been knocked in the head by the fact that in such sections of the country like South Jersey, where the soil is sandy, and where all filth is washed in the soil and filters thru with each rain, cases of gapes were never known. This proves that the heavy soil is easily polluted, and that this filth to a certain extent is the cause.

MENTION
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School and Home

ELEMENTARY AGRICULTURE

Miss Ura Leader,
Ruraldale, N. D.

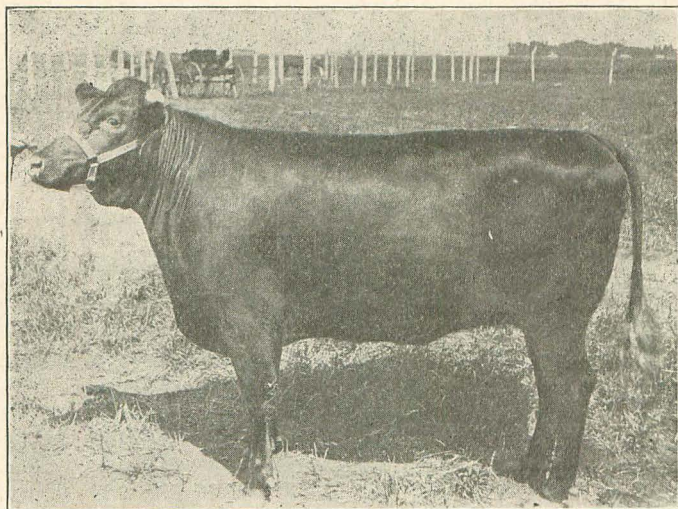
Dear Miss Leader:

The course of study for March gives you but the barest outline; hence a few additional suggestions may not come amiss.

It will be interesting for you to note and teach that of all the principal breeds of livestock the majority come from Great Britain. In the case of the four principal breeds, Short Horn, Hereford, Aberdeen Angus and Galloway, the first two are English, the last two mentioned are Scotch, as is also the West Highland. The latter, however, is not much in evidence. In the dairy class the Ayrshire is from Scotland, in the dual

As to utility there are two distinct types; namely, the beef and dairy. The former has been bred thru all these years with the one purpose in mind, that is, to get a compact, heavily fleshed beef body, while the other has been, for an equal time, bred spare, thin and angular, an animal whose business it is to manufacture food into dairy products and to use as little as possible for the laying on of flesh.

As I have just said the dairy cow is thin, spare and angular. Her back bone is prominent. She is very narrow across the withers (the region where the scapulae come together). She is thinly fleshed over the loin (region just in front of the hip bones



A Good Sample of the Beef Type

purpose group the Short Horn, Red Polls and Devons are all from England, while the Polled Durham is but an American branch of the Short Horn breed. Therefore, you will note that with the exception of the Holstein-Friesian, Guernsey, Jersey and Brown Swiss, all of our cattle breeds are either English or Scotch. The Holstein-Friesian is a Dutch breed. The Brown Swiss is the dairy breed of Switzerland, while the Guernsey and Jersey inhabit the islands in the British Channel bearing those names. Nearly all of these breeds are old, that is, they have been bred pure in their native home for hundreds of years.

or hook points as the livestock men call them). The whole hindquarter is rather thin and spare. If you will notice the picture of the Jersey cow on the cover page you can see that the line from the hip bone to the tail head is concave, also the line stretched from the tail head to the hock joint (middle joint of the hind leg) is concave. Her head is clean-cut and without flesh. The neck is also thin. The line between the neck and shoulder is distinctly drawn. The skin is stretched over the shoulder blade without a cushion of flesh. The ribs are more or less prominent. The underline is decidedly irregular, that is, the line drawn from between the

forelegs drops over the abdomen or belly part, then up very high at the rear of the body to make room for the large udder this cow must necessarily carry. This large abdominal region makes it possible for her to consume a large amount of rough feed. She must do this in order to be the serviceable machine she is intended to be. While she carries but little flesh it does not mean that she is poor or out of condition, as the livestock man says. If you will examine carefully the high producing dairy cow you will find her with but little flesh, yet with a smooth, soft coating of hair and a fine pliable skin. These characteristics never go with an animal out of condition.

Contrasted with the dairy cow is the beef animal, with his thick, well-rounded, heavily fleshed body. He is broad over the withers and along the back. The hook points and pin bones (bones at either side of the tail) are all covered over with a deep smooth coating of flesh. The upper part of the body, that is, the upper ribs and loin parts are especially well covered. Indeed he has been bred many, many years to lay on his flesh in this particular region. You, of course, know the reason for this, that these are the regions of the high-priced cuts of meat. Let your boys and girls think out the reason for this. The underline in the beef animal is straight, unlike the wavy underline of the dairy cow. He doesn't eat as much roughage, but more concentrated food; hence he does not need such large abdominal capacity. Then, too, this region of the body is wasted in slaughtering; hence he is bred spare in these parts. The rear flank is low in the beef animal because there is no necessity of a space here for the udder. The lines about the rear quarters of this animal are convex in sharp contrast with the concave lines of the dairy cow. The whole animal, therefore, presents a low, thick-set, blocky, smooth, deeply-fleshed, massive appearance. The hair here is also smooth, soft and fine, while the skin is elastic and pliable. The type form of the one animal, is quite unlike that of the other; hence the reason why many livestock men argue that it is impossible to get a first class beef and milk producing cow in one and the same animal.

These are the two extreme and really distinctive types. The dual purpose is an attempt to get in between these two, producing an animal that is fairly smooth and fleshy yet a good milker, a cow whose offspring will grow into good beef animals.

In the treatment of all animals it is necessary that the farmer or care-

taker be kind. I heard a successful livestock man addressing an audience of farmers not long since when he said—"Any man who can go into his barnyard and meet the horses and cattle and even the pigs coming up to be fondled as if they were confident of meeting a friend is already a success-

would be well to talk about the habits of growth and usefulness of these different kinds of trees. Then, you, had better spend some time on the necessity of preparing the ground well for tree-planting. It would be better, of course, if a year were spent in getting the ground in good tilth and

left on a tree freshly planted. Let the boys and girls determine the reason for pruning back a tree top at this time. After having been transplanted the tree should be given good and frequent cultivation. This, of course, prevents the ground from cracking and does not allow weeds to grow; hence the ground is kept moist and in good condition for the growth and development of the tree.

It will be a good time now for you to prepare for your Arbor Day exercises. Let Arbor Day in your school really mean something worth while. Find out early where you can get a few trees for planting. If it is necessary to have some funds for this purpose plan a school entertainment or some scheme for the raising of this money. As soon as spring opens up prepare a patch of ground for these trees. Have it thoroughly cultivated and in the best of tilth at the time when you wish to transplant the trees. After having done this arrange for their subsequent cultivation. If you can succeed in getting one good ash or elm tree to live and grow on the now bare and bleak school ground of your district, one that will grow to size and strength and beauty in future years, then you surely have erected a monument to yourself that will be worthy of any effort you may put forth in bringing about this result. The children of future generations will rise up and call you blessed.

Yours very truly,
GORDON W. RANDLETT.

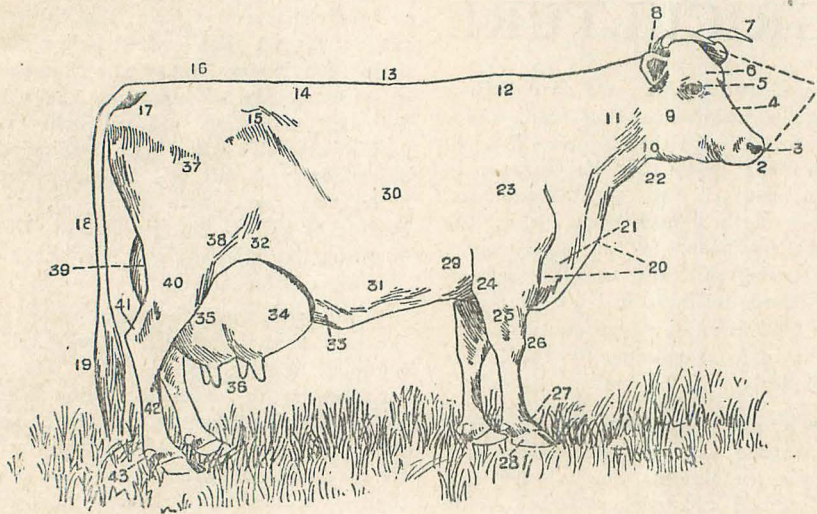


Fig. 21.—Diagram of cow showing points. 1. Head; 2. Muzzle; 3. Nostril; 4. Face; 5. Eye; 6. Forehead; 7. Horn; 8. Ear; 9. Cheek; 10. Throat; 11. Neck; 12. Withers; 13. Back; 14. Loins; Hip bone; 16. Pelvic Arch; 17. Rump; 18. Tail; 19. Switch; 20. Chest; 21. Brisket; 22. Dewlap; 23. Shoulder; 24. Elbow; 25. Forearm; 26. Knee; 27. Ankle; 28. Hoof; 29. Heart girth; 30. Side or barrel; 31. Belly; 32. Flank; 33. Milk vein; 34. Fore udder; 35. Hind udder; 36. Teats; 37. Upper thigh; 38. Stifle; 39. Twist; 40. Leg or gaskin; 41. Hock; 42. Shank; 43. Dew claw.

ful livestock man, while that man who goes in the farmyard and finds the animals trying to jump the fence at the opposite side of the yard had better not engage in the livestock business for he has in him too strongly the elements of failure." All classes of livestock should be kept comfortable and treated with kindness in order that they may produce their best results. This is especially true of the dairy cow. The cow that is ill-fed, poorly housed, tied up in stanchions that are uncomfortable, where it is impossible for her to scratch or lick herself, or one that is afraid of being beaten every time she is milked will never yield to her owner very much profit regardless of how good a cow she may be naturally. Similar consideration should be given to horses, poultry and even to pigs.

Now with the eighth grade class I think you can do no better than to spend the month in a study of trees, shrubs and landscapes. There are, of course, good groves about the farm houses in your district. Let every boy and girl become familiar with the varieties of trees even at this season when they are not clothed with leaves. You will probably find cottonwoods, box elders, elm, ash, willows, soft maples, at least, in these groves. It

conserving moisture before trees are planted. It should be well worked up to a good depth and well filled with moisture and reasonably free from weeds, especially grass, before the trees are planted.

In taking up trees for transplanting purposes as many of the small fibrous roots as can possibly be secured should be taken. These small roots should never be allowed to dry out,—in fact, if the tree can be taken up and transplanted almost immediately in a new place it is better for it. If it is left out of the ground for some time the roots should be kept moist. The hole into which the roots are set should be made plenty large and deep enough to prevent any twisting or cramping of the roots. After being placed in the hole the roots should be covered with fine moist earth, then the top of the tree shaken from side to side so as to allow the particles of moist earth to sift down among the rootlets. Next the dirt should be packed or tramped very closely around these roots. It will do them no harm if a boy or man gets into the hole and stamps the dirt down as hard as possible around them. Then more soil should be added, filling the hole up about to a level. Too much top should never be

THE DEHORNING OF CATTLE

MARCH—SEVENTH YEAR

By Richard W. Hickman

Simple Method of Restraining the Animals

The dehorning of cattle can be very satisfactorily performed without other apparatus or instruments than a good strong clothesline and a clean sharp meat saw, or a miter saw with a rigid back. The same simple means for controlling the animal is just as applicable when dehorning clippers are

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to be used as when the horns are to be removed with the saw. The head of the animal is secured to the horizontal rail or stringer which holds the upper ends of the stanchion boards. The animal is put in the stanchion in the usual manner; then one end of a heavy clothesline is passed around the upper part of the neck and tied in a knot that will not slip, otherwise it will choke the animal. The free end of the rope is now carried between the horns, thru the stanchion to the front, up and over the horizontal stanchion rail, then down underneath the neck and up and over the top of the stanchion rail to an assistant, who should hold it firmly. Now open the stanchion, allowing the animal to withdraw its head; then, keeping the rope tight, pass it once around the muzzle, up and over the stanchion rail, and thru to the front again to the hands of the assistant, who should stand 3 or 4 feet in front of the animal and hold the rope firmly, but prepared to release it when told to do so by the operator. The animal is now ready for the dehorning operation.

It is necessary that the rope be held by an assistant, as in the event of the animal's struggling during the operation so as to throw itself off its feet, or if there appears to be danger of its choking, the rope may be slackened promptly at the word of the operator and the animal partly released. This, however, is rarely necessary, for as soon as the head is secured the operator should be ready, standing at the right shoulder of the animal with his saw, and proceed to saw off first the right and then the left horn. It is a good plan before commencing the real work to experiment upon an animal in the matter of control by tying the head to the stanchion rail as described.

If the stanchion rail is too wide to permit of properly securing the lower part as well as the upper part of the animal's head, the turn of the rope around the muzzle may be omitted and the last lap of the rope carried around the stanchion rail to the front and to the hands of the assistant. Care should be taken that the rope pass each time over the neck of the animal to the stanchion rail between the horns in such a way that it will not interfere with the work of the saw.

The horns should be severed from a quarter to a half inch below where the skin joins the base of the horn, cutting from the back toward the front.

If the cut is made too high an irregular, gnarly growth of horn is very apt to follow. It will be seen that the point of union of the skin and horn varies in different cattle; hence

there can be no rule of measurement, except as the eye becomes trained to see the point or line at which the cut should be made. In the beef breeds fully one-half inch of skin, all around, is usually taken off with the horn.

Instruments for Dehorning

In recent years, since dehorning shears or clippers, have come into use, this means of dehorning is considered by some cattle owners to be preferable, especially where large numbers of cattle are to be dehorned. One type of dehorner has a stationary knife blade, with its cutting edge shaped like a very wide V, and opposing this another knife of similar shape, moving in a slide, so that the

cutting edges cut the horn from all four sides at once, all the edges passing the center at the same time. Another type has a moveable knife with one oblique or one curved edge, and the cutting is done in one direction only. The power for cutting with these instruments is supplied by pulling together two long handles, which, in order to transmit a greater force, are generally so constructed that they act thru the medium of a series of cogs.

In dehorning with these instruments the opening between the cutting edges should be slipped down over the horn and the knives closed so that their edges set firmly against the horn in such a position that the cut will be

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made in the right place and direction. The blades should be kept covered with a thick oil or grease. The handles should be drawn together with a quick, firm, strong pull, so that the horn will be completely severed by the first act and without twisting. Care should be taken to keep the blades sharpened on their original bevel.

Dehorning instruments can be procured of the manufacturers and of dealers in veterinary instruments.

In dairy districts adjacent to large cities there are men who go about from farm to farm dehorning animals, charging for their services in some instances as little as 5 cents per horn or 10 cents per animal.

There was published in the report of the New Zealand department of agriculture for 1904 a description of the operation of dehorning cattle by the government veterinarian at New Plymouth, in which it was shown that a cage had been used for the restraint of the animals during the operation, closely resembling the box used for hoisting horses out of ships, this cage being hauled on a wagon from farm to farm as needed. In discussing the various means for the removal of the horns the report was very favorable to the use of the saw in dehorning full-grown cattle. It was stated that in the dehorning of over 10,000 cows with the saw there were no deaths due to the operation, while in cows dehorned by shears there was trouble afterwards in healing of the wounds, due, no doubt, to the crushing, fracturing action which this instrument has upon old horns, where ossification of the cores is advanced. Because of this condition it was recommended that for mature animals a bone saw be used.

Treatment after Dehorning

It is not usual to apply any preparation after the operation of dehorning to prevent bleeding, as the loss of blood is not sufficient, as a rule, to be of consequence. Care should be taken, however, to prevent substances from getting into the openings left after the horns are removed. The horn cores are elongations of the frontal bones of the skull, and are hollow. They communicate with the frontal sinuses, or air spaces, of the head; therefore, foreign substances or fragments of horn which act as an irritant in these cavities are apt to set up an inflammation, resulting in the formation of pus or an abscess, which may prove quite serious. This trouble is of infrequent occurrence, but would appear more liable to happen when the dehorning instruments are used, on account of their tendency to crush,

especially in the case of old animals, whereas the saw cuts clean. If proper care is taken, however, such an occurrence following dehorning may in almost every instance be avoided.

Is Dehorning Cruel?

Inquiries are frequently received as to whether the operation of dehorning is very painful, and whether it may not be classed as cruelty to animals. Those who have had an extensive experience in dehorning appear to agree that the pain induced by the operation has been greatly overestimated, as careful observation has shown that shrinkage in the yield of milk as well as of butterfat following the dehorning of cows is very temporary and insignificant. On the other hand, the worry, pain, and cruelty often inflicted by cattle upon their mates before being deprived of their horns is much more to be considered, and not infrequently results in the death of a valuable animal. A neighbor on an adjoining farm to that owned by the writer a few years ago lost two good milch cows in one winter thru their being disemboweled by the horns of barnyard mates while out for exercise. He dehorned his entire herd almost immediately afterwards. The increased safety of the animals much more than compensates for any loss of beauty resulting from the removal of horns.

To Prevent Horns Growing on Young Calves

When circumstances are favorable, as in the case of farmers who build up their herds by raising the progeny, the horns may be prevented from growing by a simple and practically painless method, and the custom of preventing the growth of the horns is becoming more popular and more generally practiced under all conditions except in the case of calves dropped on the open range. The calf should be treated not later than one week after its birth, preferably when it is from three to five days old. The agent to be used may be either caustic soda or caustic potash, both of which may be procured in the drug stores in the form of sticks about the thickness of an ordinary lead pencil and 5 inches long. These caustics must be handled with care, as they dissolve the cuticle and may make the hands or fingers sore. The preparation of the calf consists in first clipping the hair from the parts, washing clean with soap and warm water, and thoroly drying with a cloth or towel. The stick of caustic should be wrapped in a piece of paper to protect the hands and fingers, leaving one end of the stick uncovered.

Moisten the uncovered end slightly

and rub it on the horn buttons or little points which may be felt on the calf's head, first on one and then the other, alternately, two or three times on each, allowing the caustic to dry after each application. Be very careful to apply the caustic to the horn button only. If it is brought in contact with the surrounding skin it will cause pain. Be very careful also not to have too much moisture on the stick of caustic, as it will remove the skin if allowed to run down over the face. After treatment, keep the calf protected from rain, as water on the head after the application of caustic will cause it to run down over the face. This must be carefully avoided.

In the very young calf the horn button, or point that will ultimately develop into a horn, has scarcely any attachment to the skull, and may be felt as a small button embedded in the skin. In this early stage it may be easily removed with a sharp knife or a pair of curved scissors, but even then caustics should be applied to kill any remaining cell life belonging to this germ point; otherwise there may be some subsequent irregular horn growth, which is more or less of a disfigurement.

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THE DECORATION OF SCHOOL GROUNDS

MARCH—EIGHTH YEAR

By L. C. Corbett,

Two primary objects should be kept in view in the decoration of school grounds: (1) Instruction; (2) beauty and utility.

The primary object of the school is instruction. The work of beautifying the school grounds should also carry with it an element of instruction. The grounds should serve as an object lesson for the residents of the community in which the school is located. They should be laid out on sound principles of landscape gardening, and be so well executed as to induce residents of the vicinity to copy the general idea of the plan and possibly the details of the shrubbery groups. The idea of beauty can be emphasized in the proper grouping of trees and shrubs in relation to walks, drives, and vistas, and utility can be subserved by so placing the heavy plantings as to serve as a shield from the wind or sun. Shrubby groups can be arranged so as to separate one portion of the grounds from another and yet not to interfere with large open spaces which can be used as playgrounds, such as ball fields, tennis courts, etc.

The Plan

The first essential for the work of beautifying the grounds will be a plan. The beginning of this plan may be a rough sketch of the area on which the school building stands, with directions and distances marked upon it. Next, locate the permanent objects, such as trees and buildings. Determine next the main lines of travel leading to the schoolhouse and use these as a basis for the permanent walks unless there is some good reason for changing the main paths. The walks and drives should be straight, if distances are less than 100 feet, and gently curved if longer, so as to admit of the use of trees and shrubs along the border. The outlook from each door and window should be carefully inspected before determining which objects in the landscape should be retained in view and which hidden or concealed by the use of trees and shrubs.

Trees and shrubs should be confined chiefly to the borders of the place, an open and unbroken lawn being preserved in front and at the sides or rear where playgrounds are to be maintained. In rural districts the trees should be so located as to give protection from storms in winter and from the sun in summer, and at the same time to produce a pleasing effect. Shrubs may be employed to advan-

tage in screening unsightly objects. The plans of the grounds will serve both as an exercise in geography and in arithmetic, and if the pupils are encouraged to make such designs their interest in the work will be assured and a practical application of the principles taught in the schoolroom will be a result of no little value.

Walks

The walks leading to and from the school should be direct, but where space will permit they should have gentle and pleasing curves which conform to the contour of the ground. Upon level areas it is well to allow an artistic use of shrubs in groups in the bays, which shall serve to break the monotony and obtrusiveness of an unscreened straight walk across an open lawn.

The material used in the construction of walks will be determined by circumstances and by the locality in which the work is to be done. When the walks are to be made permanent, nothing fills the requirements better than cement or artificial stone. When gravel or cement is used the walks should be made slightly crowning, and the highest point in its surface should be at least two inches below the general level of the greensward. No coping or borders should be allowed, and the grass should be brought up to the edge of the gravel or cement. A slightly sunken walk makes the care of the lawn easier, besides hiding it very effectively from view when looking across the lawn, thus giving the grass-

plot an unbroken appearance and having the effect of enlarging its extent.

Annual Plants

Annual flowering plants, such as those mentioned in the following list, may be used to give immediate effects in place of the more permanent trees and shrubs. Even after the trees and shrubs have been planted the annual plants can, with good effect, be used among them. The list is self-explanatory, and the plants can be so placed as to produce a variety in

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color or a contrast in height and general effect.

Annual Plants Suitable for School Grounds

Tall foliage plants: Castor bean, caladium, canna.

Tall flowering plants: Cosmos, scarlet sage, sunflower.

Border plants: Alternanthera, alyssum, ageratum, coleus.

Medium-tall annual flowering plants: Geranium, California poppy (Eschscholtzia), zinnia, marigold, aster, petunia, cockscomb, larkspur, nasturtium.

Climbing annuals: Cobaea scandens, moonflower, Japanese morning glory.

Trees and Shrubs

The cultural directions here given are not ideal by any means, but are offered in the way of suggestion and should be so considered.

Cultural Directions

The beauty of a shade tree depends upon its normal and symmetrical growth. In order to insure this, before planting cut off the ends of all broken or mutilated roots; remove all side branches save upon evergreens, so that a straight whip-like stalk alone remains. Dig holes at least 2 feet in diameter and 1 foot deep in good soil, and make them 4 feet across in poor soil. The sides of holes should be perpendicular and the bottom flat. Break up soil in the bottom of the hole to the depth of the length of a spade blade. Place 2 or 3 inches of fine top soil, free from sods or other decomposing organic matter, in the bottom of the hole. On top of this place the roots of the tree, spread them as evenly as possible over the bottom of the hole, and cover with 2 or 3 inches of fine top soil as before. Tramp firmly with the feet and fill the hole with good earth, leaving the surface loose and a little higher than the surface of the surrounding soil. When the work of planting is completed, the tree should stand about 2 inches deeper than it stood in the nursery.

In order to insure symmetry of growth, trees must be allowed unrestricted area for development. At least 40 feet should be allowed between trees intended to occupy the ground permanently. Quick-growing nurse or temporary trees may be planted between the long-lived ones to produce immediate results, but these should be removed as soon as they interfere with the development of the permanent plantations.

A WINTER BEDROOM

A bed-room, more than any room in the house should be furnished around the person who occupies it.

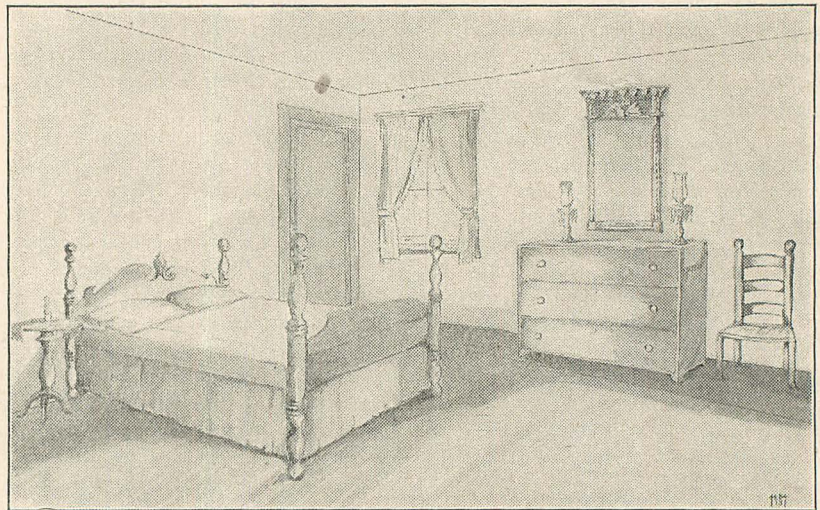
A grown-up's room should differ from a child's, and a girl's from a boy's.

The habits of a person should also influence the furnishings of a room. Take for instance the room of a middle-aged lady. If she does her reading and writing and sewing in the living-room, her bed-room should be made to show this fact. It should have in it only the things necessary to sleeping and dressing. A bed, a bureau, possibly a dresser and a several straight back chairs. This kind of a room can be made very lovely in spite of its severity.

and it is a gathering place for the family during the day, it should be furnished entirely differently.

The paper in a much-lived-in bed-room should be a deeper, richer shade. The chairs should be comfortable and inviting. There should, if possible, be a box couch covered with creton like the hangings. But in the absence of a box-couch an ordinary cot would answer, if it had over it a well-fitting cover and several sofa cushions of the creton. There should be a desk or good writing table in such a room.

The bureau and bed should be kept in the back-ground as much as pos-



View of a well arranged bedroom.

It should be papered in a plain or striped paper of some light shade; and charming effects are got by using solid white-figured madras curtains, edged with white ball trimming. If this seems cold and forbidding, then use figured cotton crepe or creton for hangings and to cover the seats of chairs.

If figured creton is used for hangings, it is a good plan to have a day-cover for the bed, made of the same. This should be long enough to fit up over the pillows when they lie flat and it should have a ruffle about fifteen or eighteen inches deep all around it. This ruffle must be slit to fit over the legs of the bed and to be kept in place should be tied under the legs with tapes.

A room furnished as described gives a good deal the effect of the above picture and is most pleasing.

The mahogany low post bed adds tremendous charm to a bed-room and can be made by any good carpenter. The posts are turned out and the head-board sawed by machinery. So much for a bed-room that is just what its name implies.

If, on the other hand, a person spends much time in her bed-room,

It is a good idea to have a screen across the front of the bed. This does not entirely hide the bed, but makes it a thing apart and cuts it off in a measure from the rest of the room.

Wicker chairs are very pretty in such a bed-room. They are dainty and comfortable and add color and life to a room when the cushions in them are covered with bright creton.

Almost any old discarded table can be used for a writing table if covered with a creton cover. Even a kitchen table would do.

There are no rugs so pretty and so useful for bed-rooms as the old-fashioned rag rugs. You can use either a large rug that approximately covers the entire floor, or small rugs, say four feet by six or seven feet. The large rugs are warmer in winter, but no prettier and the smaller ones cost less.

And so, in furnishing a bed-room, remember that if it is used only to sleep and dress in, it should be kept simple and clean and serene. And, if it is used during the day as a gathering place for the family, it should be decorated with warm, rich colors. Everything should be more luxurious,

and a writing table, screen and couch should be added to the furniture. And, if it is not too cold, put just a few gernaums in the windows.

THE THINGS TO LOOK FOR IN A GOOD PAINT

E. F. Ladd, Chemist, N. D. A. C.

What is a good paint? It is a paint that wears well and furnishes a good protective coating. When one asks, "How may we recognize a good paint," it is not so easy to answer, for in general appearance there is very little in the mixed paint, as usually found upon the market, that will enable one to judge from its appearance as to whether or not it has these two essential properties.

In selecting paint, or white leads to be used for paint, take only those which have a well established reputation. None of the catalog-house or made to order paints that have come into North Dakota thus far, belong to this class. In applying a paint the working qualities may lead one to judge somewhat of the value of the paint, but even here a person needs to be skilled. How shall we then know the things to look for in a good paint?

In North Dakota and other states where paint laws are in force, see that the paint is labeled to show the composition of the paint; and if so, avoid any paint that contains any great amount of water, say 2% or more. Water is to be avoided in all paints. Avoid paints which contain benzine or petroleum products, also paints which contain any great amount of so-called inert materials as whiting, chalk, barytes, clay, etc.

Mixed paints, aside from the added color, contain white lead and zinc as pigments, and linseed oil and turpentine as liquids. White lead constitutes the basis for the pigment to which zinc is added. Some manufacturers add small amounts of silicates or barytes, but if there is more than 10% of these constituents present, it would be well to consider whether the paint has a good reputation or simply an advertised reputation. It is claimed that the addition of a small amount of silicates, as magnesia, adds to the wearing quality, prevents settling and hardening in the can. As to the wearing quality, this has been questioned.

Paints which contain water usually have added emulsifiers or thickeners to give the paint a better appearance than it really is entitled to, and many of these emulsifiers destroy or lessen the wearing quality of the paint.

A paint without turpentine dries slowly, but with too much turpentine the paint may be destroyed, burned up. Therefore, turpentine should be used in moderation, say from 5 to 8 per cent in the liquid.

Good paints may give bad results. They may be applied over old paints in repainting where there is no foundation because the old paint was either not well applied, or a bad primer was used. Again, an inferior paint which readily peels and scales furnishes no foundation. Where paint is applied to damp lumber there is bound to be trouble; or, if dampness can come from behind so as to interfere with the paint, its wearing and protective qualities may be destroyed.

TO CLEAN FURS

If the collar or any other part of your sealskin coat has become soiled or greasy, buy ten cents' worth of fullers' earth from the druggist. Lay the coat on a table, apply the powder with the fingers and rub thoroly into the soiled parts. Then shake out and beat with a rattan.

To clean your chinchilla fur, procure five cents' worth of plaster of Paris from a paint store. Heat in a pan, and apply as hot as the fingers will permit, smoothing it gently into the fur. Then shake it out and beat lightly, as chinchilla fur is very tender must be carefully used.

Any fur coat, muff or neck-piece may be greatly improved in appearance simply by brushing with a soft brush and water, to which one tablespoonful of pure alcohol has been added for every quart. Always brush with the nap of the fur. When white or light-gray furs have become soiled they may be cleansed easily in gasoline.

HINTS TO MOTHERS

If your little boy is inclined to walk pigeon-toed, one of the best ways to correct the fault is by playing "soldier" with him. Give the command, "Shoulders up, toes out," frequently and then encourage the habit of correct walking.

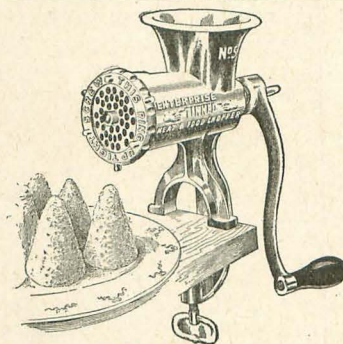
If your children are afflicted with what seems to be a catarrhal cold, have them examined for adenoids.

This may be the cause of the trouble. With a good atomizer spray their throats and noses night and morning with a mild antiseptic solution, such as boric acid.

If your baby is afflicted with constipation, try to correct it thru proper food for yourself rather than giving the baby medicine. Massaging the little ones bowels with olive oil is helpful. Castor oil should not be given regularly as the effect of each dose is to make the baby more constipated afterward.

It is a good plan for the mother of a young babe to lie down on the bed with it while feeding it. This gives her the necessary rest and the child is more apt to drop off quietly to sleep without acquiring the habit of being rocked.

Officials of the Bureau of Chemistry, Department of Agriculture, are about to begin test shipments all over the country to determine what degree of shrinkage may be allowed in the regulations which it is proposed to adopt in the enforcement of the "net weight" amendment to the pure food law which requires the weight of contents of food packages to be marked on the outside. Experts of the bureau will also go about testing automatic weighing and bottle-filling machines.



Getting Meals for Company

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Meat AND Food Chopper

you would be delighted and surprised to see how easy it is to get a meal for a large company. You can have the daintiest dishes—good things that tickle the palates of your guests—and yet they will be inexpensive. But it is for everyday use that this chopper pays for itself over and over again.

If you do any butchering, you will find it just the thing for chopping sausage meat. It is the one chopper that gives the chopping cut—does not squeeze, mangle or crush. It really CHOPS meat and other food, using a four-bladed knife that chops clean and fast. A minute is time enough to chop sufficient for a meal for a good-sized family. This chopper is without an equal. If you want a still lower-priced machine, ask to see the

ENTERPRISE FOOD CHOPPER.

Costs from \$1.25 to \$2.25, according to size. Send 4c for "The Enterprising Housekeeper," our new cook-book. Full of good things to cook and know.

Go to your dealer and he can show you the ENTERPRISE line

THE ENTERPRISE MFG. CO. OF PA.
Dept. 32 Philadelphia, Pa.

FISH WE SELL FRESH FROZEN HERRING, from Knife River, Minn.; per sack \$3.00 per 100 lbs.; per box \$3.50 per 100 lbs. The freight is the same from Knife River as from Two Harbors. I live together with the fishermen here, so I can get good and fresh herring at all times, and larger quantities, and pike and pickerel. Send for pricelist. Reference: St. Louis Bank, Duluth, Minn.
R. T. Loining, Box 147, Knife River, Minn.

Seasonable Receipts

Cooked Codfish

Make a cream codfish; add chopped hard-boiled eggs. Put into ramekins or baking dish and cover with fine grated bread crumbs, first stirring into them melted butter on top of the stove, and bake until browned in the oven.

Egg Rolls

From bread dough, after making quite stiff, take one pint; add three or four eggs, one-half cup butter, one-half cup sugar, one-half teaspoon cinnamon, flour to make a soft dough. Set in a cool place until night, then make into small rolls and let rise till morning.

Raisin Bread

On baking day take enough of the bread sponge for two or three loaves, and to this add three eggs, one cup sugar, butter and raisins, one teaspoon cinnamon and enough flour to mix stiff. Then let rise and proceed the same as with other bread.

Steamed Brown Bread

One cup sweet milk, one cup sour milk, one cup molasses, one cup English currants, one cup cornmeal, one cup graham flour, one cup wheat flour, one egg, one teaspoon each of soda and salt. Steam three hours.

Devils Food

One-half cake chocolate, one cup sweet milk, yolks of two eggs. Boil this and cool. Two cups brown sugar, one-half cup butter, three cups flour, one cup sour milk, two eggs, one teaspoon soda. Add to the boiled part and bake in moderate oven. Will cut in forty pieces.

Prune Cake

One cup sugar, one-half cup butter, two eggs, one cup prunes stewed and chopped, four tablespoons sour cream, one teaspoon soda, one-half teaspoon each cloves and nutmeg, two cups flour.

Lemon Pie

Grated rind, juice of one lemon, one cupful water, one cupful sugar, two table-spoonfuls butter. Cream sugar and butter together. Add grated yellow and juice from the lemon. Dissolve cornstarch in a little cold water, then fill the cup with boiling water. Add the egg last.

Noodle Soup

Use the broth in which mutton was boiled, of which there should be about one quart. Carefully remove the fat and add one bay leaf, half a teaspoonful of celery

salt, two or three drops of onion juice and pepper and salt. Boil for a few minutes, then strain and add the noodles.

Noodles

To one beaten egg and a little salt add sufficient flour to knead. Work rapidly on the moulding board for a few minutes, then roll very thin and cut into strips an eighth of an inch wide and about two inches long. Stand aside to dry, and occasionally toss about that they may dry evenly. When ready to finish the soup, add to the boiling stock and cook fifteen or twenty minutes; when it is ready to serve add a little grated nutmeg.

Croutons

A good way to use stale bread. Cut the bread in slices, spread with butter, cut in squares and brown in oven. These croutons are excellent in all soups and also take the place of zweibach if properly browned.

Coffee Cake

One cup brown sugar, one-half cup butter, one-half cup molasses, one-half cup strong coffee, two eggs, one-half teaspoon soda, one teaspoon cinnamon, one-half teaspoon cloves, one-half grated nutmeg, one cup raisins chopped, one cup currants, two cups flour. Bake rather slowly.

Bread Sponge Cake

Two cups bread sponge, two cups sugar, two eggs, one teaspoon lemon extract, one teaspoon cinnamon, one teaspoon allspice, one teaspoon nutmeg, one teaspoon, soda dissolved in hot water, one-half teaspoon salt, one cup raisins, one-half cup melted butter, one and one quarter cup flour. Mix and put in baking pan; set in warm place; let rise an hour and bake 45 minutes.

MISCELLANEOUS

Library Paste

Wet a cupful of flour with a pint of cold water, rubbing it smooth. Pour gradually three cupfuls of boiling water over this, working well until you have a smooth batter. Set over the fire and stir for three minutes. After the boiling point is reached pour it out and when luke warm beat into it one teaspoonful of oil of cloves or cinnamon. Put in bottle and cork tightly.

Pour boiling water over a turkey or chicken which has stood for several days to ripen, to bring back its plumpness.

Equal parts of spirits of turpentine and ammonia will remove paint from wash fabrics.

The low-down uniformly pruned tree will produce more fruit and of a quality superior to that of the tall tree, while the ease with which the fruit is picked from the low-down tree recommends it to all.

For Polishing a Range

An expert housekeeper gives us her method of caring for the top of her range.

When my range is warm, but not hot, I rub a piece of paraffin over the top, covering the entire surface with this coat of wax. Then I take an old stocking and rub the top good and hard. By keeping my "paraffin rag" handy and giving my range a little rub off nearly every day, and a thorough cleaning every Saturday my range has a polished top which makes it easier to clean because it is not porous and grease cannot penetrate it.

A GOOD COLD CREAM

Spermaceti, one-half ounce white wax one-half ounce; sweet almond oil, two ounces; lanoline, one ounce; cocoanut oil, one ounce; tincture of benzoin, three drops; orangeflower water, one ounce.

Melt the first five ingredients in a porcelain kettle. Take from the fire, and add first the benzoin, then the orange-flower water, fluffing it with an egg-beater until cold. Fill into ointment jars.

BAKER'S COCOA Is Good Cocoa



Of fine quality, made from carefully selected high-grade cocoa beans, skillfully blended, prepared by a perfect mechanical process, without the use of chemicals or dyes. It contains no added potash, possesses a delicious natural flavor, and is of great food value.

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North Dakota Farmer, Lisbon



Why "Mound City" House Paint **HOLDS** Its Gloss

WHY do you see so many dull,
faded-looking houses?

The trouble with such houses is that they are Oil-hungry. They are painted with a paint that has not enough Linseed Oil in it—a paint that never *could* have enough Oil in it on account of the character of the pigments used.

The best Paint *must* do two things. It must preserve and beautify. Do you know that Linseed Oil is *the* great preservative in Paint and that if it were not for the sake of appearance, you could give your house a coat of pure Linseed Oil, and it would be protected?

The solid part of Paint (Strictly Pure White Lead, Strictly Pure Zinc, and, in some Paints, baser metals) acts as beautifier only.

Strictly Pure Zinc absorbs more Oil than any other pigment and that is the reason for its use in Horse Shoe Paint. WHITE LEAD is used for its covering qualities, and ZINC for its *Oil-carrying* capacity.

And Oil-carrying capacity is what your Paint *must have* if your property is to be protected.

Horse Shoe Paint, while it covers and beautifies the surface thoroughly, is made of pigments that carry so much oil, that the *first* coat satisfies the oil-hunger of the wood leaving the second coat to gloss, harden, protect, and beautify.

That's why Mound City Horse Shoe Brand House Paint **HOLDS** its gloss.

Mound City Paint & Color Co.

GOOD MAKERS OF GOOD PAINTS

St. Louis, U. S. A.